

FLIGHT

First Aero Weekly in the World.

Founder and Editor : STANLEY SPOONER.

A Journal devoted to the Interests, Practice and Progress of Aerial Locomotion and Transport.

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EDITORIAL COMMENT.



The Latest Zepp. Raid.

LAST Saturday night's raid on London and other parts of England, and its result of two of the latest Zeppelin airships lost to the Germans, may well give the enemy food for reflection. The reports so assiduously spread by the Hun lie-factory of the terrific destruction wrought by German raiding air-squadrons, have, as we have so repeatedly noted, by the very colossal mendacity of their statements, seriously discounted them in the eyes of those they were meant to impress. London has repeatedly been laid in ashes—yet the raiders make the "ruins" their objective time after time. So with Hull, Grimsby, and other important centres. Each time Hun aircraft visit these shores these places are again destroyed or seriously damaged. Always, too, they have reported that "all our airships returned safely to their base." Even in the case of the destruction of what has become known as the Cuffley airship, the lie-factory did its best to conceal the truth. But whatever reports may be issued for the consumption of neutrals and their own people, the German higher command knows the truth. It knows

more and more that in proportion to the efforts made the real damage inflicted has been small and has certainly not affected the military situation by one iota. And that, too, when for long enough the invading aircraft were almost free to come and go without let or hindrance. Now that this is no longer the case, they must be more than ever wondering if the game is really worth the candle.

Two in one night is a high price to pay for practically nothing. Let us hasten to say that we are far from regarding the loss of life as negligible. We deplore the toll of civilian life—and particularly the lives of the women and children as deeply as anyone—but we must view these matters in their true perspective. If the losses were ten or a hundred times as great as they have been, the grim resolve of the nation to pursue the war to its bitter end would not be abated one jot. Rather would it be strengthened to crush an enemy who makes war on women and children and glories in the exploits of its "heroes of the air."

From the public's point of view it is gratifying to know that at last our aerial defences have reached a point when the enemy cannot contemplate a continuation of "frightfulness" without grave risk to himself. But here again we must preserve our sense of proportion. It is officially stated that about twelve airships participated in the raid. Of these two were destroyed, and, presumably, ten safely returned to their base. That means, roughly, 15 per cent. of casualties, which is materially low. Morally, the proportion may be much higher than that figure, but that is not the point. It is certainly not enough that the enemy may be left to calculate that he can continue to carry on his baby-killing raids in the practical certainty that, if his luck is out and ours is most distinctly in, he may lose 15 per cent. of his craft. We have undoubtedly improved our defences—and our luck has been better—but we cannot afford to relax the effort until they are in such a state of efficiency that the Hun must reckon on the *certain* loss of 50 per cent. whenever he has the temerity to attempt an attack on this country.

At the same time, we congratulate the officers and men of our gallant air services on their fine achievement of Saturday and Sunday last. Even before that, it is a matter of knowledge that the Germans were seriously asking whether aerial frightfulness is all they

were told. The loss of two of their latest and best Zeppelins will certainly give them more to think about.

**The
New
R.A.F. Chief.**

There is no particular merit, when one is in possession of absolute knowledge beforehand, in suggesting some particular appointment merely for the self-afforded opportunity of patting oneself on the back as being more or less the author of the accomplished fact when it is announced. We, therefore, refrained from saying anything about the appointment of Mr. Henry Fowler to be Superintendent of the Royal Aircraft Factory until such time as official authority was given for its announcement. Our reticence was not due to ignorance, but rather to a sense of obligation to "play the game."

The selection of Mr. Fowler for the post seems to us to be a singularly fortunate one. It is as chief mechanical engineer of the Midland Railway that Mr. Fowler is best known to the world of engineering. To automobilists he has long been known as a keen observer of the development of motor traction. More than that, he has identified himself with the movement very closely by assisting in many of the early trials and tests of the days when the motor car was striving for recognition as the coming method of locomotion. He was officially connected with the early trials promoted by the Liverpool Self-Propelled Traffic Association, and later, was closely associated with practically all the trials promoted by the A.C.G.B.I., as it then was. Thus he brings to his new work at the R.A.F. a wide knowledge of the internal combustion engine, which cannot but be extremely helpful.

It is not only, however, as a very able engineer that the new chief will prove so great an acquisition to the R.A.F., but as an organiser and a powerful driving force. Since the formation of the Ministry of Munitions, Mr. Fowler has been acting as Director of Production, and it is an open secret that the wonderful results achieved in production have been in no small measure due to Mr. Fowler's forceful personality and his habit of indefatigable work. For if he is one thing more than another he is a worker of workers, and a man of phenomenal vitality. He has a charm of manner, which creates a willingness to work with him, but he is insistent that that work shall fulfill its purpose. That he is embarking on a difficult task will only make him the more determined to make the R.A.F. what it ought always to have been. That he will succeed we thoroughly believe.

**The
Air Services
Fund.**

Does it appeal, we wonder, to those who read in their daily papers that the control of the air has definitely passed to our airmen, that there is a price to be paid day by day for its retention? Kipling wrote: "If blood be the price of admiralty, Lord God, we ha' paid in full."

And the price we have paid, and are paying, for the admiralty of the air has been a bitter one. Not that we grudge it—it has to be paid that we may remain a nation and an Empire—but we can at least do what is in us to see that the dependents of those who have paid the uttermost price for us do not go

wanting. Let us remind our readers that there exists an Air Services Fund, administered by the Royal Aero Club, which exists for this and cognate purposes. Further, we would impress upon them that the need for funds will increase, since the development of the aerial war means that more of the rank and file of the air services are figuring in the casualty lists than during previous months of the war. The coming of the fighting aeroplane meant the employment in the air of more non-commissioned officers and men than when the work was almost confined to reconnaissance and raids. Needless to say, the more employed on the hazardous work of war in the air, the heavier must be the losses, and it is up to those most closely identified with aviation to make it their urgent business to put the Air Services Fund in a position to carry out the objects for which it was inaugurated.

**A Scandal
of the
First
Magnitude.**

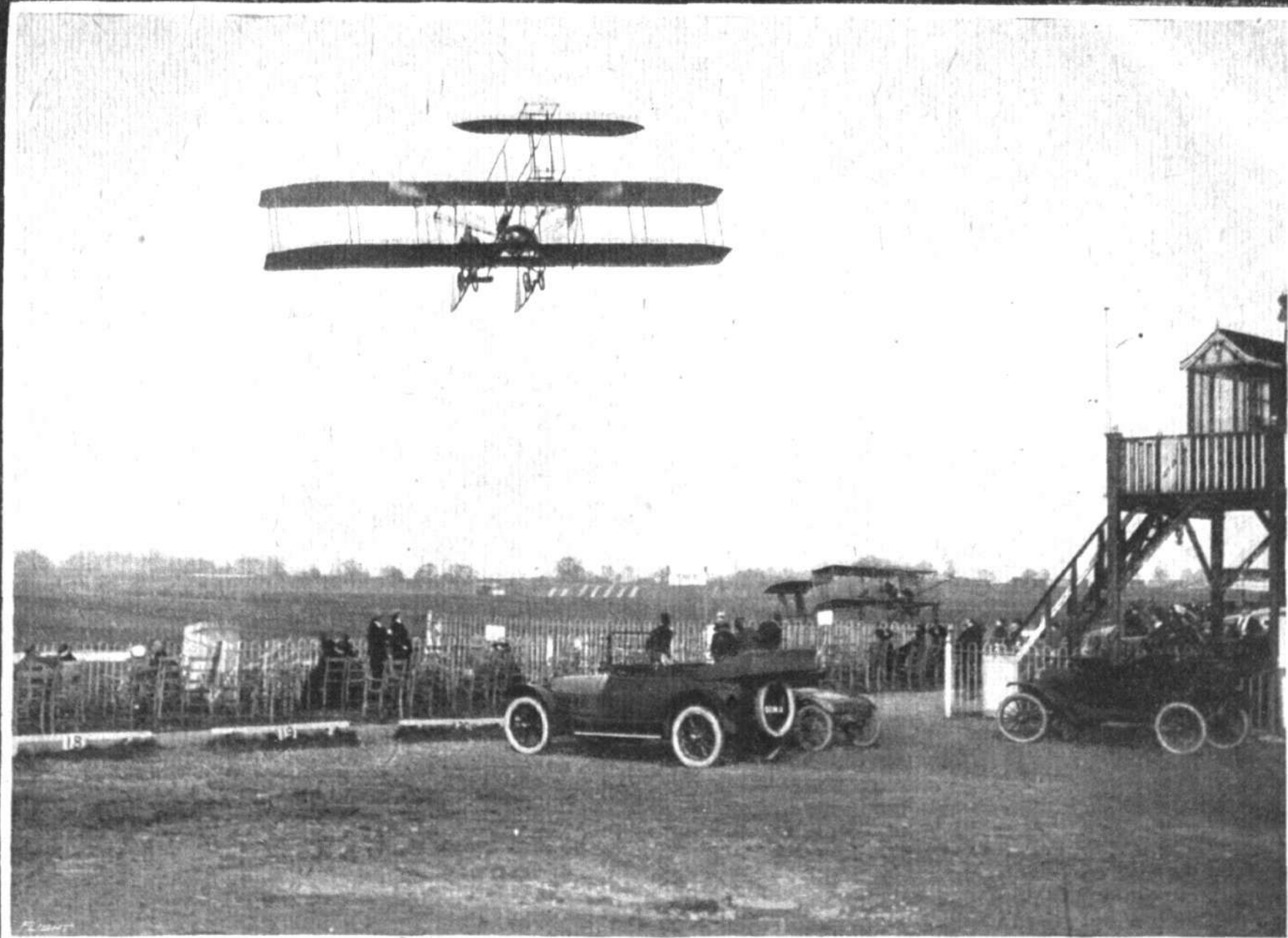
It is not often that we concern ourselves with matters that are not directly associated with the movement with which this journal is primarily identified. There are occasions, however, when it is impossible not to express strong opinions upon subjects that normally lie outside our sphere. We have read with astonishment and disgust of the action of the authorities in the matter of the taking over of Adastral House—otherwise De Keyser's Hotel—for the work of the R.F.C.

We would specifically exclude the R.F.C. from any odium which may attach to our remarks, as, of course, they are innocent "holders" and pitch their tent where the lawyer officials indicate.

Briefly, the facts are stated to be as follows. The War Office, acting under the powers it possesses under the Defence of the Realm Act and other authorities, took over the premises for the housing of the Royal Flying Corps—which it admittedly had a perfect right to do. The building contains about 400 rooms, and is valued at some £300,000. There is a debenture debt of £144,000, and at the time of its appropriation by the War Office, the affairs of the hotel were being run by a receiver for the debenture holders. Naturally, the question of the rent to be paid came up for discussion between the receiver and the authorities, and a rental of £19,000 per annum, being 5½ per cent. on the valuation, was suggested as being a fair figure. The discussion proceeded in an apparently amicable manner. It progressed to a point at which the Office of Works asked if the proposed rental could not be reduced to £17,000 per annum.

All of a sudden, the negotiations took a completely different turn. The Controller of Supplies wrote saying that it would be to the advantage of all concerned if the whole question of compensation should be referred to the Defence of the Realm Losses Royal Commission. The "Duke Commission," as that body is known, held that the Crown, being entitled by its prerogative rights to the possession of any premises it might select, "it would be a derogation of those rights to pay any rent whatever!" The Lands Branch of the War Office later followed this up by the astounding dictum, which has already been so shamefully made use of in this war, that: "Compensation is made *ex gratia*, and is strictly limited to

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FLIGHT

A REMINISCENCE OF HENDON.—Mr. Kenworthy, on a Beatty-Wright, returning to the Aerodrome after executing many thrilling evolutions just out of the range of the camera

the actual monetary loss sustained." The irony of this is apparent when it is recalled that the affairs of the hotel are in the hands of a receiver and that it was making no profit at the time it was taken over. The net effect of the Government's contention is that neither the debenture holders nor the shareholders are to receive a penny piece by way of compensation for the use by a public department of their premises!

A worse example of the doctrine of confiscation by a Government of private property it would puzzle Germany or Turkey to produce. It is a fair sample of what has been going on and what has to be expected in the future for our complaisant acceptance of rule by the lawyer caste. Steeped to the lips in feudalism and brought up to regard the quibble as an art to be cultivated and excelled in, there is no length to which the lawyer politician will not go, no depth to which he will not descend, so long as he can keep within the four corners of the law he himself has evolved and, having evolved in all its devious phrasing, proceeds to interpret to suit himself.

Fortunately, there is a precedent which will probably assist in setting aside the preposterous idea that the Crown may possess itself of the property of the individual and pay nothing for it, or, alternatively, make a payment to be assessed by itself as "an act of grace." We refer to the similar case in which an aerodrome was taken over by the War Office, the owners of which had to fight their way through the Courts in defence of their rights. After losing in the Court of King's Bench and the Court of Appeal, they proceeded to the House of Lords, but before judgment was asked for, the Crown discovered that it was wrong, agreed to pay compensation and thus avoided a possibly adverse decision which would have been binding as a precedent. In commenting upon this case in our issue of July 23rd, 1915, we said:—

"If, as it would appear from the arguments on behalf of the Crown, upheld by the Court of Appeal,

the prerogative of the Crown legally entitled it to make this very one-sided bargain, the sooner it is set right the better. True, it was admitted that 'as a matter of grace' the King might consider the giving of compensation. But surely in this year of our Lord nineteen hundred and fifteen we should have done with such 'acts of grace.' The loyal citizen desires no such act of grace. His desire is to serve his King and country in their need to the best of his ability, coupled with the right in return for justice as an individual suffering by necessity of circumstances in the common cause of the community. And that should carry with it compensation for compulsory acquisition—always provided there is anything to show there is compensation due.

"In this connection we have no knowledge of the particular case as to whether any or how much compensation might be morally due, or whether it may be a case of relief to the owner to acquire the premises. We express no opinion whatsoever therefore on this point. But that the Crown should be at liberty to seize any and all property at its own sweet will, without even an iota of right on the part of the owner to claim compensation for whatever it may be worth, appears to be going away back to the dark days of feudalism."

These words apply with equal force to the case at present under notice. This doctrine of the lawyers that the individual is to be made to pay what should be a charge on the community requires to be set right. If the Crown—or, rather, those who do in the name of the Crown acts which the Crown itself would be the first to disown—cannot be brought to recognise the difference between *meum* and *tuum* through the Courts, then it is for the non-lawyer element in Parliament to set the matter right legislatively. The country has stood a great deal in its anxiety not to hamper the administration, but it will not stand barefaced confiscation.

Air Raids and Munition Workers.

THE following announcement was issued by the Ministry of Munitions on September 26th:—

"If a munition worker (as defined by the Munitions of War (Amendment) Act, 1916, is, on or after October 1st, 1916, killed or injured by hostile aircraft, or by the measures taken to combat them, whilst upon the premises of the factory in which he is employed, and if the injured worker or his dependents on proceeding under the Workmen's Compensation Act, 1916, fail to recover compensation, His Majesty's Government undertake to pay compensation on the scale of the Act."

An American View.

IN view of the mendacious fables sent out from Berlin regarding the results of Zeppelin raids on England, it is interesting to note the following comment by the *New York Times* on Sunday's raid:—

"In view of the German loss of life and the cost in the latest Zeppelins, one may predict that the German idea of crushing the British by the latest species of frightfulness will be apt to cool a little. As a rule, on the day after the raid the Berlin Government Press Bureau sends a long descriptive wireless bulletin to America, and doubtless to other neutral countries, describing the damage done to 'fortified towns, ammunition factories, dockyards, ships in harbour,' and so forth—a long list of strictly military damage. This time no such wireless has arrived, and when it does will be little credited—first, because the British bulletins already

published here have been found accurate, and next, because the German accounts—even those of the latest battles—have been so extravagantly inaccurate as to excite ridicule."

The *New York Tribune* says that, according to information which reached them a few weeks ago, Germany has less than twenty Zeppelins of the dimensions of those destroyed.

The Seizure of the "Prins Hendrik."

AN exciting incident at the seizure of the Dutch mail steamer "Prins Hendrik" by German torpedo-boats was the appearance of an aeroplane, or, according to a German semi-official report, three aeroplanes, which attempted to bomb the torpedo-boat escorting the steamer through the minefield after she had been released from Zeebrugge. The German account states that the torpedo-boat was undamaged, but that the mail steamer was slightly damaged and three of the crew wounded.

The Danish Trans-Atlantic Project.

TO the Copenhagen correspondent of the *New York Times*, Ensign Pollner has given some further details of his proposal to fly across the Atlantic. The seaplane is to be built in Denmark by engineers from the Polytechnic Academy, Copenhagen, and will have two motors of 160 h.p. each. It will carry a fuel supply of two and a half tons. The young officer means to start from Copenhagen early in July, flying directly to the Faroe Islands, and waiting his chance there to take the trip across the sea. Severinsen, a mechanical engineer, will accompany Pollner, who is already busy on his preparations.

The British Air Service

"PER ARDUA AD ASTRA"

Under this heading published each week the official announcements of appointments and promotions affecting the Royal Naval Air Service and the Royal Flying Corps (Military Wing) and Central Flying School. These notices are not duplicated. By way of instance, when an appointment to the Royal Naval Air Service is announced by the Admiralty it is published forthwith, but subsequently, when it appears in the LONDON GAZETTE, it is not repeated in this column.

Royal Naval Air Service.

The following appeared among the Admiralty announcements of September 19th:

Flight-Sub-Lieutenants (Temporary).—R. H. Collet, D.S.C., specially promoted; Flight-Lieutenant (Temporary), for war service, seniority Sept. 10th, and reappointed. The under-mentioned have been entered as Probationary Flight Officers (Temporary), and appointed to "President," additional, for R.N.A.S. seniority as follows: O. C. Le Pontillier and N. D. Hall, Aug. 21st; S. G. Wingfield, J. T. C. Gray, R. D. Sach, C. E. Fox, H. F. Airey, W. R. Sims, C. L. Nightingale, A. T. Maxwell, D. Hammond and R. B. Picken, all Sept. 24th. Temporary commissions (R.N.V.R.) have been granted to the under-mentioned, seniority as follows: Lieutenant: C. E. Lygo, Sept. 20th. Sub-Lieutenants: A. J. Long, Aug. 10th; W. Tod, D. A. Duncan and T. Rogers, all Sept. 20th.

The following appeared among the Admiralty announcements of Sept. 23rd:

B. Davies and H. W. Bamber have been granted temporary commissions as Lieutenant (R.N.V.R.) and Sub-Lieutenant (R.N.V.R.) respectively, seniority Sept. 22nd, and both appointed to "President," additional for R.N.A.S.

The following appeared among the Admiralty announcements of September 25th:

Surgeon G. G. D. Fergusson to the "President," additional, for Chingford Air Station, to date Sept. 23rd.

Royal Flying Corps (Military Wing).

The following appeared in the *London Gazette* of September 19th:

Flight-Commanders.—From Flying Officers, and to be Temporary Captains whilst so employed: Lieut. W. E. Collison, Special Reserve; Aug. 28th, 1916. Temporary 2nd Lieut. R. Chadwick, General List; Sept. 5th, 1916. Lieut. J. A. G. de Courcy, R.A.; Sept. 9th, 1916.

Equipment Officers.—From Assistant Equipment Officers, and to be Temporary Captains whilst so employed: Lieut. V. W. Eyre, Special Reserve; July 26th, 1916. Lieut. J. W. Griffith, Special Reserve; Sept. 5th, 1916.

Flying Officers.—Temporary 2nd Lieut. C. M. Clement, General List; June 16th, 1916. June 17th, 1916: 2nd Lieut. (Temporary Lieut.) M. C. Hayter, 1st Co. of Lond. Yeo. (T.F.); Lieut. W. C. Mackey, Sco. Rif., and to be seconded; 2nd Lieut. F. Egerton, 17th Lrs., and to be seconded; Temporary Second Lieut. B. L. Dowling, A.S.C., and to be transferred to the General List; 2nd Lieut. (on probation) A. W. Chisham, R. Fus., Special Reserve, and to be seconded; 2nd Lieut. (on probation) J. D. Stodart, Special Reserve; July 28th, 1916. Temporary 2nd Lieut. E. Bainbridge, General List; Aug. 11th, 1916. 2nd Lieutenants, Special Reserve: M. H. Butler; Aug. 16th, 1916. C. L. Milburn; Aug. 10th, 1916. Aug. 21st, 1916: Lieut. A. W. Ruthven-Stuart, Gord. Highrs. (T.F.); Temporary Lieut. H. W. Auster, Carr. Bn., Worc. R., and to be transferred to the General List; Temporary 2nd Lieut. E. H. Hall, D. of Corn. L.I., and to be transferred to the General List; 2nd Lieut. O. R. Knight, R.W. Surr. R. (T.F.); 2nd Lieutenants, Special Reserve: E. D. Clarke; Aug. 22nd, 1916. Aug. 23rd, 1916: E. E. Erlebach and H. A. Howell. E. P. M. Shaw; Aug. 24th, 1916. Aug. 25th, 1916: 2nd Lieut. W. L. Birch, W. York R. (T.F.); Temporary 2nd Lieut. P. L. Lingard, General List; Aug. 26th, 1916. Lieut. R. J. Elliott, 10th Canadian Inf. Bn.; 2nd Lieut. S. G. Rome, Arg. and Suffd. Highrs., and to be seconded. Aug. 27th, 1916: Temporary 2nd Lieut. V. F. H. Hugill, R. Fus., and to be transferred to the General List. 2nd Lieutenants, Special Reserve: W. C. Fenwick, M. Sharp, T. B. W. Spencer and N. B. Hair; Aug. 28th, 1916.

Assistant Equipment Officers.—2nd Lieut. E. A. Mayner, Special Reserve; Aug. 1st, 1916. 2nd Lieut. G. W. A. Brown, Special Reserve; Aug. 14th, 1916. Aug. 21st, 1916: Temporary 2nd Lieut. F. H. Cooke, Linc. R., and to

be transferred to the General List. Temporary 2nd Lieut. W. Scott, Notts and Derby R., and to be transferred to the General List. 2nd Lieut. Special Reserve, F. W. Roberts; Temporary 2nd Lieut. H. B. Dell, General List. 2nd Lieutenants, Special Reserve: S. M. Baber and A. W. Grigsby. Temporary 2nd Lieut. W. H. Gouldstone, General List; Aug. 23rd, 1916. 2nd Lieut. J. Pearce, R.O. Sco. Bord., and to be seconded; Aug. 25th, 1916. Sept. 1st, 1916: Temporary Capt. H. E. A. Landsay, General List; Temporary Capt. W. Troup, General List.

Memoranda.—The date of appointment of Major B. R. W. Beor, R.A., as Temporary Lieutenant-Colonel is May 24th, 1916, and not as stated in the *Gazette* of July 10th, 1916, but without the pay and allowances of that rank prior to June 18th, 1916.

Second Lieutenants (on probation), from R.F.C., Special Reserve, to be Temporary 2nd Lieutenants on the General List, for duty with R.F.C., Aug. 24th, 1916: R. H. Lownds, H. E. Ward.

Pte. C. K. Scott, from A.S.C., to be Temporary 2nd Lieutenant for duty with the R.F.C.; Sept. 11th, 1916.

To be Temporary 2nd Lieutenants (on probation), for duty with R.F.C.: Aug. 5th, 1916: W. H. Jones, from No. 6 Officer Cadet Bn.; R. O. Purry, from No. 8 Officer Cadet Bn. Cadet A. I. Gilson, Cadet A. W. L. Nixon and Cadet J. A. Rossi.

Supplementary to Regular Corps.—2nd Lieutenants (on probation) confirmed in their rank: A. T. Croucher, H. B. Dresser, G. Ralston, N. B. Hair, G. A. Giles, E. E. Erlebach, C. H. Stokes, M. Sharpe, G. Mackrell, T. B. W. Spencer, E. P. M. Shaw, W. C. Fenwick, H. A. Howell, T. G. Holmes, C. L. Milburn, E. D. Clarke, M. H. Butler, H. H. W. Vowden, H. E. L. Pilbrow, T. Morrison, C. J. Kennedy, A. E. M. Jansen, R. M. Baird, E. A. Mayner, P. E. Jeffcock, T. Perkins, A. W. O'Q. Shire, N. Kemsley, H. J. Robinson, S. Hay, L. Stones, F. F. Woodyer, G. A. Lawlor, E. G. Herbert.

To be 2nd Lieutenants (on probation): F. B. B. Shand; Aug. 7th, 1916. A. H. Bates; Aug. 28th, 1916. Count L. T. B. di Balme; Sept. 18th, 1916.

The following appeared in a supplement to the *London Gazette* issued on September 20th:

Flight-Commander.—Capt. E. R. L. Corballis, R. Dub. Fus., from a Deputy Assistant Director at the War Office; Aug. 12th, 1916, but with seniority from Nov. 28th, 1914.

Flying Officers.—Aug. 21st, 1916: Temporary Lieut. H. B. Milling, Motor M.G.C., and to be transferred to the General List. 2nd Lieutenants, Special Reserve: T. G. Holmes, G. Mackrell, G. A. Giles. 2nd Lieut. (on probation) N. E. S. Simon, Special Reserve. 2nd Lieut. (Temporary Lieut.) N. MacL. Robertson, 3rd Lowland Brig., R.F.A. (T.F.); Aug. 23rd, 1916. Aug. 24th, 1916: Lieut. (Temporary Capt.) J. Thorburn, Forth R.G.A. (T.F.); 2nd Lieut. (Temporary Lieut.) C. C. Durston, H.A.C. (T.F.); Temporary 2nd Lieut. J. H. Crutch, attd. R. Berke. R., and to be transferred to the General List; 2nd Lieut. C. H. Stokes, Special Reserve. 2nd Lieut. A. W. Saunders, R.F.A., Special Reserve; Aug. 25th, 1916. Temporary 2nd Lieut. C. Thomas, R. Fus., and to be transferred to the General List; Aug. 28th, 1916.

Assistant Equipment Officers.—Temporary 2nd Lieut. A. Latimer, General List; June 24th, 1916. 2nd Lieutenants, Special Reserve, Aug. 11th, 1916: G. Ralston and H. B. Dresser.

Supplementary to Regular Corps.—2nd Lieut. (on probation) L. G. Fraser resigns his commission; Sept. 21st, 1916.

The following appeared in a supplement to the *London Gazette* issued on September 21st:

Flight-Commanders.—2nd Lieut. (Temporary Lieut.) J. V. McLean, Northumbrian Brig., R.F.A. (T.F.), from a Balloon Officer, and to be Temporary Captain whilst so employed; Sept. 4th, 1916. From Flying Officers, and to be Temporary Captains whilst so employed: Lieut. V. S. Brown, Special Reserve; Sept. 6th, 1916. 2nd Lieut. A. Ball, Notts and Derby R. (T.F.); Sept. 13th, 1916.

Flying Officers.—Temporary 2nd Lieut. H. D. Hamilton, General List; Aug. 16th, 1916. 2nd Lieut. A. T. Croucher, Special Reserve; Aug. 19th, 1916. Temporary Capt. O. H. Ormrod, R.F.A., and to be transferred to the General List; Aug. 21st, 1916. Aug. 22nd, 1916: Temporary 2nd Lieut. J. B. Graham, R. Fus., and to be transferred to the General List. Temporary 2nd Lieut. G. Hedderwick, 1st Res. Regt. of Cav., and to be transferred to the General List. Temporary 2nd Lieut. S. J. Steenekamp, R. Fus., and to be transferred to the General List. Temporary 2nd Lieut. N. Goudie, General List. Aug. 23rd, 1916: 2nd Lieut. (on probation) H. Thompson, Special Reserve; Capt. W. H. Anderson, Australian F.C.; Lieut. S. Woodrow, Australian F.C.; Temporary 2nd Lieut. J. G. Will, Leins. R., from a Flying Officer (Observer), with seniority from April 1st, 1916; 2nd Lieut. W. E. Kemp, R. Lanc. R., Special R., and to be seconded; 2nd Lieut. T. Perkins, Special Reserve; 2nd Lieut. A. E. M. Jansen, Special Reserve. Aug. 24th, 1916: Temporary 2nd Lieut. P. A. McGuinness, Northd. Fus., and to be transferred to the General List; 2nd Lieut. C. V. Kerpen, Northn. R., Special Reserve, and to be seconded; 2nd Lieut. S. Crosfield, Ches. R. (T.F.); Temporary 2nd Lieut. G. Edwards, General List; Lieut. E. E. Barnes, R.E., Special Reserve; 2nd Lieut. W. H. Dolphin, Ind. Army Res. of Off.; 2nd Lieut. F. F. Woodyer, Special Res.; Temporary 2nd Lieut. R. W. Chappell, General List; 2nd Lieut. C. J. Kennedy, Special Reserve. 2nd Lieut. S. Hay, Special Reserve; Aug. 26th, 1916.

Assistant Equipment Officers.—2nd Lieutenants, Special Reserve: Aug. 28th, 1916: P. B. Harris, R. M. Baird, P. E. Jeffcock, H. J. Robinson, A. W. O'Q. Shire, J. L. Andrew, A. S. F. Morris, A. W. Payne, D. W. Wilson. 2nd Lieut. (on probation) T. G. MacKenzie, Special Reserve. Temporary 2nd Lieut. W. F. Merritt, General List. 2nd Lieut. J. N. Stephens, Special Reserve. 2nd Lieutenants (on probation), Special Reserve: L. G. P. Warren, A. C. Hartley; Sept. 1st, 1916.

Supplementary to Regular Corps.—2nd Lieutenants (on probation) confirmed in their rank: P. B. Harris, T. E. Gorman, C. C. Morley, L. G. Courage, E. B. W. Bartlett, O. C. Godfrey.

To be 2nd Lieutenants: J. L. Andrew; Aug. 3rd, 1916. L. Mantell; Aug. 13th, 1916. W. H. Farnell; Aug. 26th, 1916.

To be 2nd Lieutenants (on probation):—Aug. 21st, 1916: C. W. Barnsley, T. Woodman. A. E. Squire; Aug. 22nd, 1916. H. Lloyd; Aug. 25th, 1916. J. H. B. Foss; Aug. 27th, 1916.

The following appeared in the *London Gazette* of September 23rd:—

The date of appointment of temporary Lieut. A. T. Eason, Notts. and Derby R., as a Flying Officer is July 27th, 1916, and not as stated in the *Gazette* of August 3rd, 1916.

Flying Officers.—2nd Lieut. N. Kemlsey, Special Reserve, Aug. 9th, 1916. 2nd Lieutenants (on probation), Special Reserve: A. J. McWha. Aug. 16th, 1916: P. H. Smith. Aug. 19th, 1916: H. B. Burrell; Aug. 21st, 1916. Aug. 23rd, 1916: Temporary 2nd Lieut. S. A. Martindale, Middx. R., and to be transferred to the General List; 2nd Lieut. E. B. W. Bartlett, Special Reserve. Aug. 24th, 1916: 2nd Lieut. (temporary Lieutenant) C. E. V. Porter, Essex R., T.F.; 2nd Lieut. J. H. Dodgshon, Surr. Yeo., T.F. Aug. 27th, 1916: 2nd Lieut. (on probation) S. H. Pratt, R. Fus., and to be seconded; 2nd Lieut. M. S. Faraday, Home Counties Brig., R.F.A., T.F. Aug. 28th, 1916: 2nd Lieut. T. West, Kent Fortress Engrs., R.E., T.F.; Temporary 2nd Lieut. (on probation) E. T. C. Brandon, R. Suss. R., and to be transferred to the General List. Aug. 29th, 1916: 2nd Lieut. (temporary Lieutenant) J. McKelvie, Northumbrian Divl. Engrs., R.E., T.F., from a Flying Officer (Observer), with seniority from April 29th, 1916. 2nd Lieut. (temporary Lieutenant) R. C. Kean, S. Lanc. R., T.F.; 2nd Lieut. (on probation) A. G. Jarvis, Special Reserve.

Flying Officers (Observers).—Temporary 2nd Lieut. C. Murchie, General List. Sept. 1st, 1916: Temp. 2nd Lieut. L.

Reynolds, Northd. Fus., and to be transferred to the General List. Sept. 2nd, 1916: Sept. 4th, 1916: Lieut. (temporary Captain) W. A. Fleming, Devon. R. Temporary Lieut. C. G. Rushton, General List; Lieut. the Hon. R. G. Winn, C. Gds., and to be seconded; 2nd Lieut. A. N. Greg. R. War. R., T.F.; Temporary 2nd Lieut. F. Gartside Tippinge, R.A., and to be transferred to the General List; Temporary 2nd Lieut. R. A. Preston, N. Lan. R., and to be transferred to the General List; Temporary 2nd Lieut. C. J. Denton, General List. Sept. 5th, 1916: Lieut. (temporary Captain) J. W. Pain, Suff. R., T.F.; Temp. 2nd Lieut. F. W. Day, R. Fus., and to be transferred to the General List. Sept. 7th, 1916: Temporary Capt. H. Wadlow, A.S.C., and to be transferred to the General List; Lieut. A. P. M. Hill, R.A., and to be seconded; Lieut. D. L. Macauley, 2nd Canadian Prov. Bn.; 2nd Lieut. W. B. Saint, R. Scots, T.F.; 2nd Lieut. G. N. Cousins, R. Innis. Fus. (since killed in action); 2nd Lieut. C. W. Busk, Suff. R., and to be seconded; Temporary 2nd Lieut. J. M. R. Langley, General List.

Adjutants.—2nd Lieut. R. S. Rumbold, Som. L.I., from May 31st to July 31st, 1916. Capt. J. T. Dyer, E. Lan. R., and to be seconded, vice Capt. C. Fraser, N. Staff. R. Aug. 9th, 1916. Temporary Lieut. W. T. Blake, General List, vice 2nd Lieut. (temporary Captain) R. S. Rumbold, Som. L.I. Aug. 13th, 1916. Temporary Capt. W. B. Hellard, General List, from a Balloon Officer. Sept. 6th, 1916.

Assistant Equipment Officers.—2nd Lieutenants (on probation), Special Reserve.—C. J. Pender, C. H. Vincent, F. H. Sanders, D. N. Keith, F. G. Seabrooke, R. T. Vernon, P. Young. Aug. 21st, 1916.

Memoranda.—The notification in the *Gazette* of Aug. 14th, 1916, relating to L.-Corpl. Reginald Noel Swann is cancelled. The notification in the *Gazette* of Aug. 26th, 1916, relating to the undermentioned is cancelled: Serge. Arthur Sydney Talbot, Pte. Clive Russell Bray. The notification in the *Gazette* of Aug. 30th, 1916, relating to the undermentioned is cancelled: Pte. Herbert Cornelius Bourne, Gunner Clifford Bray King.

The following appeared in a supplement to the *London Gazette*, issued on Sept. 23rd:—

Squadron Commander.—2nd Lieut. (temporary Captain) W. A. Grattan Bellew, Conn. Rang., from a Flight Comdr., and to be temporary Major whilst so employed. Sept. 5th, 1916.

Equipment Officer.—Lieut. F. S. Creswell, Special Reserve, from an Assistant Equipment Officer, and to be temporary Captain whilst so employed. Sept. 1st, 1916.

Flying Officers.—2nd Lieut. (on probation) E. F. Nash, Special Reserve, Aug. 24th, 1916. Aug. 26th, 1916: Capt. J. Everidge, Surr. Yeo., T.F., from a Flying Officer (Observer), with seniority from May 1st, 1916; 2nd Lieut. E. G. Waters, Hamps. Yeo., T.F.; 2nd Lieut. D. H. de Burgh, R.A., from a Flying Officer (Observer), with seniority from April 1st, 1916; 2nd Lieut. H. Dewhurst, W. Ridg. Brig., R.F.A., T.F.; 2nd Lieut. R. S. Aitken, E. Anglian R.G.A., T.F.; 2nd Lieut. O. C. Godfrey, Special Reserve; temporary 2nd Lieutenants, General List.—S. Smith, S. L. Pope, E. P. Charles; 2nd Lieut. L. G. Courage, Special Reserve; 2nd Lieut. (on probation) N. B. Lovemore, Special Reserve.

Assistant Equipment Officers.—2nd Lieutenants Special Reserve.—L. Mantell. Aug. 13th, 1916. W. H. Farnell. Sept. 9th, 1916.

Memorandum.—L.-Corpl. Robert F. McMichael, from Res. Bn., S. Afr. Inf., to be temporary 2nd Lieutenant for duty with the R.F.C. Aug. 14th, 1916.

Supplementary to Regular Corps.—2nd Lieut. (on probation) E. V. Tinham-Davenport resigns his commission. Sept. 24th, 1916.

Aeronautical Inspection Department.

The following appeared in a supplement to the *London Gazette* issued on September 20th:—

K. Robertson to be Temporary Hon. Lieutenant (without Army pay and allowances) whilst employed in the Aeronautical Inspection Department; Sept. 21st, 1916.



A Badge for 1st Class A.Ms., R.F.C.

AN Army Order, dated September 24th, announces that a distinguishing badge consisting of a "two-bladed propeller" has been approved for 1st Class Air Mechanics of the Royal

Flying Corps. The badge for the greatcoat and service dress jacket will be of worsted embroidery, and, being a badge of appointment, will be worn horizontally above the elbow on the right arm only.

MORE REWARDS FOR THE R.F.C.

In a supplement to the *London Gazette*, issued on September 22nd, it was announced that His Majesty the King has been graciously pleased to approve of the appointments of the undermentioned Officers to be Companions of the Distinguished Service Order, in recognition of their gallantry and devotion to duty in the field —

Temporary 2nd Lieutenant HENRY COPE EVANS,

General List, attached R.F.C.

For conspicuous gallantry and skill on many occasions in attacking hostile aircraft, frequently against large odds. In one fortnight he brought down four enemy machines, returning on one occasion with his machine badly damaged.

Captain JOHN UPTON KELLY, Wilts. R. and R.F.C.

For conspicuous gallantry and skill on several occasions. When making a reconnaissance he came down to 500 feet under heavy fire, and obtained valuable information. Again, in attempting to observe through clouds, he flew over the enemy lines at 500 feet, and although severely wounded and almost blind, he brought his machine back to our lines.

Temp. Capt. ALLISTER MACKINTOSH MILLER, Cav., and R.F.C.

For conspicuous gallantry and skill when attacking troops on the ground under heavy fire. On one occasion he flew close to the ground along a line of hostile machine-guns, engaging them with his machine-gun, drawing their fire, and enabling the cavalry to advance. Again, when alone, he engaged five enemy machines, bringing one down, and also successfully bombed a troop train, coming down to 300 feet to make sure of hitting.

It was also announced that His Majesty the King has been graciously pleased to confer the Military Cross on the undermentioned Officers in recognition of their gallantry and devotion to duty in the field:—

2nd Lieut. MALCOLM GLASSFORD BEGG, Rif. Bde. and R.F.C.

For conspicuous gallantry and skill in contact patrol work. A close reconnaissance was required of a certain locality, and he came down to 700 feet and obtained valuable information under a heavy fire from the ground.

Lieutenant CHARLES MEREDITH BOUVERIE CHAPMAN,

E. Kent R. and R.F.C.

For conspicuous gallantry and skill in action against hostile aeroplanes. On one occasion he attacked three I.V.G.s and one Fokker, shooting the latter down. Later, during an air battle with eleven enemy machines, he brought another Fokker down.

Lieut. WILLIAM EARDLEY HARPER, Dut. L.I., S.R. and R.F.C.

For conspicuous gallantry and skill in many aerial combats, and notably when, acting as Gunner Observer, his machine, with two others, met six hostile aeroplanes. He at once attacked and shot down one machine. He then attacked and drove down a second one. A thick fog came on and in landing his machine was wrecked, and he was badly cut and shaken. He managed to walk two miles to his aerodrome and to deliver his report before collapsing.

2nd Lieutenant ALEXANDER LINDSAY MACDONALD,

R. Highrs. and R.F.C.

For conspicuous gallantry and skill when carrying out artillery and patrol work at low altitudes and under heavy fire. On one occasion he dispersed a large body of infantry by machine-gun fire from 1,200 feet, and then at once turned a battery on to another advancing battalion, causing many casualties.

2nd Lieut. THOMAS EARLE GORDON SCAIFE, Dn. Gds. and R.F.C.

For conspicuous gallantry and skill when on contact patrol work during active operations, often flying low under heavy fire. On one occasion, when flying at 1,000 feet, his petrol tanks were pierced by shell fire. He managed to stop the holes and enabled his pilot to bring the machine home.

2nd Lieut. CUTHBERT WILLIAM SHORT, R. of O., I.A. and R.F.C.

For conspicuous gallantry and skill. On one occasion, when our cavalry were held up by machine-gun fire, he, with Captain Miller as pilot, came close to the ground, and flew several times along the line of hostile machine-guns, drawing their fire and engaging them with his Lewis gun, thus enabling the cavalry to advance.

Temporary Captain JACOB GUY SWART, R.A. and R.F.C.

For conspicuous gallantry and skill in attacking troops on the ground from a low altitude, his machine being frequently subjected to very heavy machine-gun and rifle fire from the ground.

Capt. H. E. F. WYNCOLL, Notts. and Derby. R. and R.F.C.

For conspicuous gallantry and skill as an observer, and in

attacking troops on the ground from low altitudes. On one occasion, with Captain Swart as pilot, he successfully attacked three detachments of the enemy, his machine being subjected to heavy machine-gun and rifle fire from the ground.

The undermentioned Officer has been awarded a Bar to his Military Cross for subsequent acts of conspicuous bravery:—

Captain LEOLINE JENKINS, R.G.A. and R.F.C.

For conspicuous gallantry and skill. He has done much fine work for the artillery, often under very difficult circumstances. On one occasion he flew for a long time at a very low altitude under continual machine-gun and artillery fire. (The Military Cross was awarded in *London Gazette*, dated June 3rd, 1916.)

In a supplement to the *London Gazette* issued on September 26th it was announced that H.M. the King has been graciously pleased to approve of the appointment of the undermentioned Officer to be a Companion of the Distinguished Service Order in recognition of his gallantry and devotion to duty in the field:—

Second Lieutenant (Temporary Lieutenant) ALBERT BALL,

M.C., Notts and Derby R. and R.F.C.

Observing seven enemy machines in formation, he immediately attacked one of them and shot it down at 15 yards' range. The remaining machines retired. Immediately afterwards, seeing five more hostile machines, he attacked one at about 20 yards' range and shot it down, flames coming out of the fuselage. He then attacked another of the machines which had been firing at him, and shot it down into a village, when it landed on the top of a house. He then went to the nearest aerodrome for more ammunition, and, returning, attacked three more machines, causing them to dive under control. Being then short of petrol he came home. His own machine was badly shot about in these fights.

The undermentioned has been awarded a Bar to his Distinguished Service Order for subsequent acts of conspicuous gallantry:—

Lieutenant ALBERT BALL, D.S.O., Notts and Derby R. and R.F.C.

When on escort duty to a bombing raid he saw four enemy machines in formation. He dived on to them and broke up their formation, and then shot down the nearest one, which fell on its nose. He came down to about 500 ft. to make certain it was wrecked. On another occasion, observing 12 enemy machines in formation, he dived in among them, and fired a drum into the nearest machine, which went down out of control. Several more hostile machines then approached, and he then fired three more drums at them, driving down another out of control. He then returned, crossing the lines at a low altitude, with his machine very much damaged. (The award of the Distinguished Service Order is also announced in the *Gazette* of this date.)

H.M. the King has been graciously pleased to confer the Military Cross on the undermentioned officers in recognition of their gallantry and devotion to duty in the field:—

Second Lieutenant NORMAN BREARLEY, L'pool. R., Special Reserve and R.F.C.

He went out to attack an enemy kite-balloon, and managed to get immediately above his objective. He then pretended that he had been hit by anti-aircraft fire and side-slipped down to 1,500 ft., when he suddenly dived at the balloon, which was being hauled down, and fired into it until he almost touched it. When at 300 ft. from the ground the balloon burst into flames and was entirely destroyed. He then returned.

Temporary Captain GERALD DIXON-SPAIN, R. Fus. and R.F.C.

Second Lieutenant GUY PATRICK SPENCE REID, Sea. Highrs. and R.F.C.

Captain Dixon-Spain, with Second Lieutenant Reid as pilot, attacked and drove back a hostile machine. A few minutes later four hostile machines were seen, three of which were attacked, one after another, and driven back, the fourth being accounted for by another patrol. Another time they attacked two hostile machines, shot one down and drove the other back. Two days later they attacked two more machines, of which one is believed to have been destroyed, the other being pursued back to its aerodrome.

Lieutenant ERNEST DORLAND HICKS, Can. Force and R.F.C.

He brought down two enemy machines and attacked and drove back over their lines three others. On one occasion he came down to 800 ft. and bombed trains. On another he came down to 300 ft. and dropped bombs on a station.

THE "X" AIRCRAFT RAIDS.

IN view of the decision of the Government not to allow details of places visited by enemy aircraft to be published, we are, as before, giving to each one an index number. Eventually, when details are available, we shall give the respective information under these index numbers, which will facilitate easy reference to each particular raid.

"X 47" Raid.

The following *communiqué* has been issued by the Field-Marshal Commanding-in-Chief, Home Forces:—

September 22nd, 4.50 p.m.

"A German seaplane appeared near Dover between 3.5 and 3.10 p.m. this afternoon. Anti-aircraft guns at once came into action, and several aeroplanes went up in pursuit of the raider, which at once made off in a north-easterly direction. Three bombs were dropped, but there were no casualties."

German Version.

Berlin, September 22nd.

"One of our aeroplanes, stationed in Flanders, dropped bombs on the military barracks near Dover."

"X 48" Raid.

THE following *communiqués* have been issued by the Field-Marshal Commanding-in-Chief, Home Forces:—

September 23rd, 11.55 p.m.

"A number of hostile airships visited the East and South-Eastern coasts to-night. Bombs have been dropped in various places and the raid is still in progress. No report of casualties or damage is yet to hand. A further *communiqué* will be issued in the morning."

September 24th, 2.50 a.m.

"An attack by hostile airships was made on Lincolnshire, the Eastern Counties, and on the outskirts of London. The latter attack was from the North-East and South-East about midnight and was beaten off by the anti-aircraft defences."

"One airship was brought down in flames in the southern part of Essex, and reports have been received that another fell on the Essex coast; the latter report is not yet confirmed. No reports of casualties or damage have yet been received."

12.15 p.m.

"Fourteen or fifteen airships participated in the attack on Great Britain last night. The South-Eastern, Eastern, East Midland Counties, and Lincolnshire were the principal localities visited. An attack on London was carried out by two airships from the South-East between 1 and 2 a.m., and by one airship from the East between 12 and 1 a.m. Aeroplanes were sent up and fire was opened from the anti-aircraft gun defences, the raiders being driven off. Bombs were dropped, however, in the Southern and South-Eastern districts, and it is regretted that 28 persons were killed and 99 injured."

"Two of the raiders were brought down in Essex. They were both large airships of a new pattern. One of the raiders fell in flames and was destroyed, together with the crew. The crew of 22 officers and men of the second were captured."

"Detailed reports of casualties and damage have not yet been received."

5.20 p.m.

"Latest reports show that probably not more than twelve airships participated in last night's air raid. Police reports from the Provinces indicate that the damage done by the raiding airships was slight. At one town in the East Midlands, however, a number of bombs were dropped, and it is regretted that two persons were killed and eleven injured. It is feared that two more bodies are buried under some ruins in this town. Some damage was caused at a railway station, and about a dozen houses and shops were wrecked or damaged, and a chapel and a storehouse were set on fire. With this exception no other casualties have been reported outside the Metropolitan area, and although a large number of bombs were dropped promiscuously over the districts visited by the airships the material damage is insignificant. A great number of bombs fell in the sea or in open places."

"In the Metropolitan area 17 men, 8 women, and 3 children were killed; 45 men, 37 women, and 17 children being injured. A considerable number of small dwelling-houses and shops were demolished or damaged; a number of fires were caused; two factories sustained injury; some empty railway trucks were destroyed, and the permanent way was slightly damaged in two places."

"No reports have been received of any military damage."

September 26th, 5.20 p.m.

"It has now been established that the two airships brought down in this raid were the naval Zeppelins 'L 32' and 'L 33.' Both were of very recent construction. The first airship was finally destroyed by an aeroplane after passing through effective gunfire. The second airship was hit by gunfire from the London Defences, and forced to descend in Essex through loss of gas."

"Owing to deaths from injuries having occurred and to casualties not having been reported to the police immediately, some amendment must be made to the list of casualties caused during the raid on the night of September 23rd-24th. Corrected figures are as follows:—Killed: 23, men, 12 women, 3 children; Total, 38. Injured: 56 men, 43 women, 26 children; total, 125."

German Version.

Berlin, September 25th.

"During the night of September 23rd several naval airships dropped bombs on London and places of military importance on the Humber, and in the Midland Counties, including Nottingham and Sheffield. The result was everywhere observed by big fires, which could be seen for a long time. On their way, before crossing the British coast, the airships were taken under fire by guard vessels, and during the attack itself under extraordinarily heavy fire with incendiary shells by numerous anti-aircraft batteries. They silenced some batteries by well-directed volleys."

"Two airships fell victims to the enemy anti-aircraft defences of London. All the others returned undamaged.—(Signed) Chief of the Admiralty Staff."

It is officially stated that, in addition to the fact that no anti-aircraft defences or places of military importance were damaged, the account is full of the usual misstatements.

"X 49" Raid.

THE following *communiqués* have been issued by the Field-Marshal Commanding-in-Chief, Home Forces:—

September 25th, 11.45 p.m.

"Several hostile airships crossed the East and North-East Coasts between 10.30 and midnight. Bombs are reported to have been dropped at several places between Northern and North-Midland Counties. An airship has also been reported off the South Coast. No reports of damage or casualties have been received."

September 26th, 3.15 a.m.

"Several hostile airships, probably six in number, visited the North-Eastern and Southern Counties during the night. Bombs were dropped in the Northern Counties, and some casualties and damage are reported. Full reports have not yet been received."

12.10 p.m.

"Seven airships carried out a raid on England last night and in the early hours of this morning. The districts attacked were the South Coast, East Coast, North-East Coast and North Midlands. The principal attack was aimed against the industrial centres in the last-mentioned area. Up to the present no damage to factories or work of military importance has been reported. It is reported, however, that a number of small houses and cottages were wrecked or damaged in some places, and 29 deaths have been reported."

"No attempt was made to approach London."

"The raiders were engaged by the anti-aircraft defences and were successfully driven off from several large industrial centres."

September 26th, 5.20 p.m.

"In the raid of last night the total casualties so far reported are: Killed, 36. Injured, 27."

"Very slight damage was caused, and none whatever of military importance."

□ □ □

German Airship Casualties.

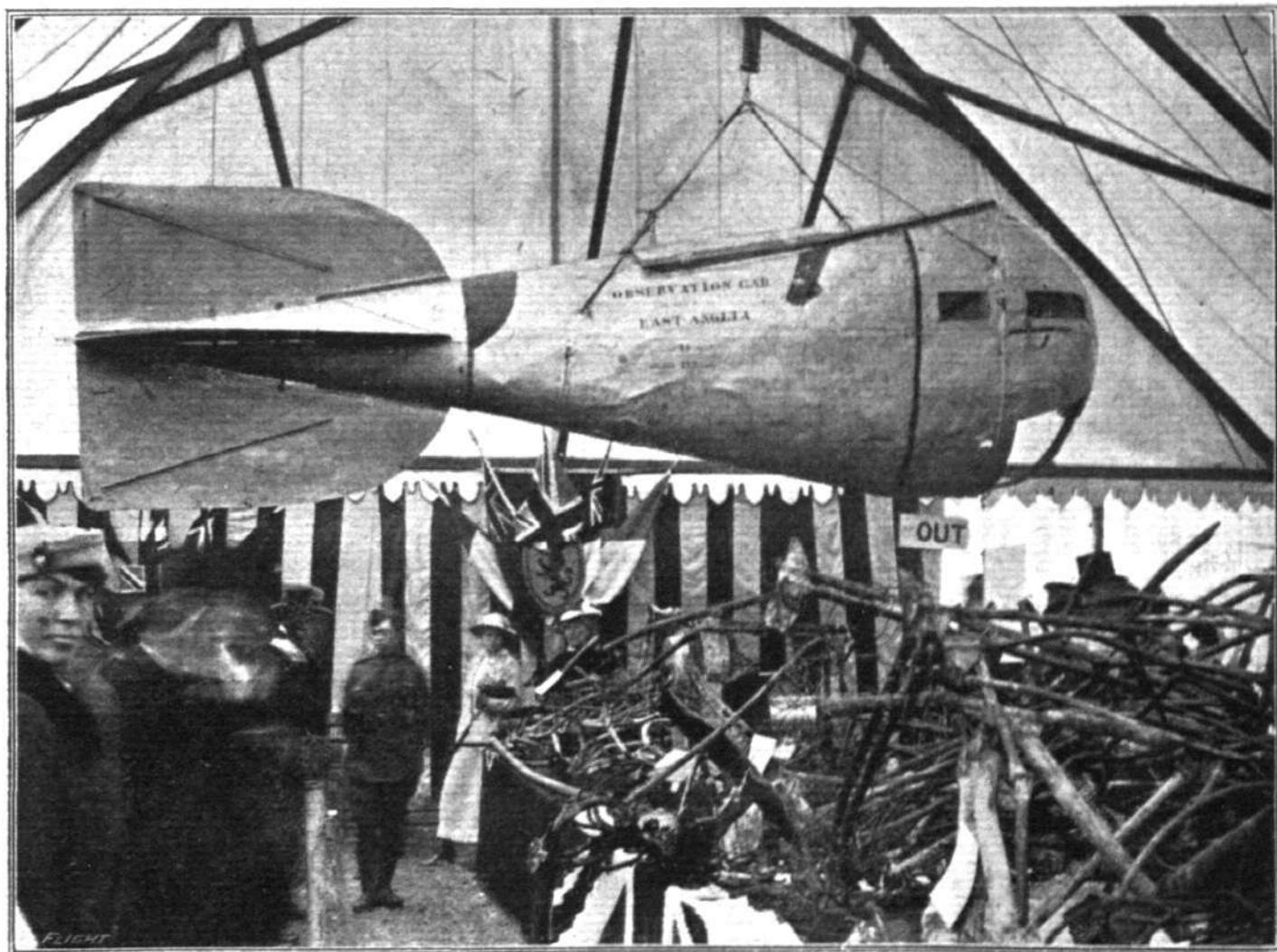
A SECOND list of German Army airship losses gives (in addition to the one including the name of Captain Schramm) 17 names, 16 registered as missing and 1 died of sickness, says the *Daily Mail* correspondent at Amsterdam. The list includes 1 infantry captain, 2 lieutenants, 10 engineers, 2 helmsmen, 1 N.C.O., and 1 private.

RELICS OF THE CUFFLEY AIRSHIP EXHIBITED AT THE H.A.C. GROUNDS.

JUDGING from the length of the queue awaiting admission into the tent temporarily containing the remnants of the airship destroyed at Cuffley on September 3rd, the bringing down of two more airships this last week-end has given an extra impetus to the interest shown in the exhibition now held at the H.A.C. grounds, Finsbury, where large numbers of people have during the last few days availed themselves of the opportunity of inspecting at close quarters all that remains of the airship brought down by Lieut. Robinson, V.C.

Although severely "strafed" by the intense heat of the burning gas and the subsequent impact when striking the ground, much remains that is of interest. Of the framework little enough has survived, owing to the extensive use of wood in the construction, what there is of it being in the nature of subsidiary structures such as control mountings, engine beds, &c., rather than portions of the main framework. Of the latter, practically all there is to give an indication of the form of construction employed is a few central rings with cables attached, these evidently running out radially from the central ring to points on the periphery of the polygonal formers that carried the longitudinal girders. Of the outer fabric covering nothing remains, a few torn fragments coated with a somewhat thick layer of grey paint having probably come off one of the gondolas, as the thickness of paint on it would appear to be prohibitive to its employment on the entire envelope. A few pieces of what looks like oilskin appears to have formed part of one of the ballonets, but an insufficient quantity of this as well as of the main framework remains to be able to estimate with any

degree of accuracy what were the number of ballonets or what the overall length of the airship. That she cannot have been a small one seems evident from the size of the four engines, which must have developed something like 250 h.p. each. The engines themselves are so unlike any of the German aero engines as we know them that it is difficult to say for certain of what make they are, and no name-plate is to be found on either of them which might have given a clue as to their identity. All four engines are of the vertical type, with six separate cylinders. In general appearance they are not unlike the 8-cylinder pre-war Mercedes engines, which had, however, their cylinders cast in pairs. There is no overhead cam-shaft as in the smaller Mercedes engines used on the German aeroplanes, but the large 8-cylinder Mercedes referred to above, which was, by the way, rated at 230-240 h.p., was also without overhead cam-shaft, the valves being operated by push rods and rockers. In the engines on view overhead valves are employed, three exhaust and two inlet valves to each cylinder, the inlet valves being operated through tappets and rockers from a cam-shaft situated on one side of the engine, while the exhaust valves are similarly operated from a cam-shaft on the opposite side of the engine. The water jackets are in the shape of a T, asbestos and rubber washers being inserted between adjoining cylinders to form a watertight joint. Clutches and reversing gears giving two speeds in each direction are fitted to all the engines, the propellers having evidently been used for checking the speed of the airship and for manœuvring. So far as it is possible to see, the propellers have been



THE ZEPPELIN RELICS.—The observation car found in East Anglia—and some of the miscellanea on exhibit at the H.A.C. Headquarters, City Road.

Photo. "Daily Mail."

placed concentrically with the engine shafts around a longitudinal axis, and have been carried on a tubular framework, a long, hollow shaft, some 4 ins. in diameter and about 5 ft. long, connecting the gear-box and the hub plates of the propellers.

These latter are of large size, having a diameter of about 20 ft., and a maximum blade width of about 1 ft. 6 ins. They are built up of 10 laminations of different kinds of wood, mostly walnut and mahogany, and have brass edgings on the outer portion of the blades. According to the stamps on the hub they were made by Lorentzen, of Bremerhafen.

Of other items of interest mention may be made of the electrical switchboard from which the releasing of the bombs is controlled. Pulling down a small switch, the knob of which is not unlike those ordinarily found on motor cars, closes a circuit which operates a small electromagnet, the armature of which actuates the release mechanism holding the bomb in place. When released the bomb slides down a bomb tube until clear of every obstacle. On one of the tables are seen some of the gas valves, consisting of two wood rings—a male and a female—held together by strong springs encased in the interior of pulleys, from which stranded cables pass to eye-bolts on the corresponding ring. In the way of armament there are to be seen several machine guns with cases of ammunition, the projectiles appearing to be unusually pointed.

Although not forming part of the same airship, the observation car picked up in East Anglia forms a very interesting exhibit. It is built up of a light framework of channel steel, covered with light gauge aluminium. It has a hemispherical nose, from which a conical tail projects backwards, the extreme point of the tail carrying vertical and horizontal fins, the object of which is obviously that of keeping the car head to wind when the airship is travelling at speed. Incidentally the method of suspension is interesting, and might be applied with advantage to the anchorage of kite balloons, since it is obvious that one may regard the observation car, hanging down by virtue of its weight and lagging behind the cruising airship on account of the resistance of the car itself and its cable, as equivalent to a kite balloon straining upwards on account of its lift and tending to drift back owing to the resistance of its envelope and anchor cable. The method of suspending the observation car consists of taking four short lengths of cable, attached with their inner ends to four points on the framework of the car, to one end of a coil spring, to the other end of which is attached the end of the single lift cable by means of which the car is suspended. Forming the core of this lift cable is a copper cable, serving evidently as a telephone wire, and the interior of the observation car bears evidence of having been fitted up with telephone, electric light, &c. A flat floor is built into the framework of the car, and on this the observer would lie stretched out flat, for making observations through the windows in the lower part and sides of the hemispherical nose-piece of the car, telephoning his observations to the commander of the airship. Owing to the resistance of the car and its cable it would, when the airship was under way, be some distance behind the airship, so that there would be little danger of the bombs dropped hitting the observation car. The means whereby the car was raised and lowered are evident from the windlass shot or dropped down with the car. That a man can in this manner be lowered a very considerable distance appears evident from the size of the drum on the windlass, which appears capable of holding several thousand feet of cable. On a cloudy night the advantages of being able to lower a man down below the clouds while keeping the airship above them would seem to be very considerable, and if used in connection with Vere lights the man in the car should get a rather good view of the ground below.

The expenses in connection with the exhibition are being borne by the Lord Mayor—Sir Charles Cheers Wakefield—who performed the opening ceremony on Monday. He said he was in communication with the authorities regarding the inclusion of some relics from the two airships wrecked in Essex. He hoped they might be able to have some on view towards the end of the week. On Tuesday over 70,000 people visited the exhibition.

ZEPPELINISMS.

MR. LLOYD GEORGE, the Secretary for War, on his return to town on Monday, visited one of the areas where bombs were dropped. J

A RESIDENT of an Essex village who saw the burning airship said to a representative of the *Daily Telegraph* :—

"It would be about half-past one when the airship was brought down. As I was watching it, it seemed to turn end up, and made a dive to the ground. It came down in four pieces, the first piece seemed about three times the size of the other pieces. A number of men in the vicinity burst into cheering when the airship fell. It took about 3 minutes for the monster to come to earth. The bodies of the airship crew were taken to a barn close by, which was turned into a mortuary."

ANOTHER eye-witness relates :—

"When the searchlights dropped on to the airship it suddenly turned round and travelled in a semi-circle. I saw it burst into flames, and when I got up on the scene a petrol tank riddled with shot was found in one field, and another tank was found some distance off in another field. The features of one young man recovered from the debris were quite recognisable, but most of the others were burned beyond recognition. One man, who was believed to be the commander, was found in an adjoining field. He was wearing an Iron Cross and his hand clasped field glasses. The local fire brigade came on the scene, but the fire was not extinguished until some two hours afterwards. The bodies were found in different parts of the meadow, and apparently some of the crew had jumped from the airship before the final crash."

"The airship burst into flames, which licked round it like the ignition of an incandescent mantle. It seemed to burn for about two minutes, gradually descending in an end-on position. It did not seem to burn quite so fiercely as the aircraft which was destroyed at Cuffley, but I believe the cause of this was that last night's victim contained more aluminium."

MOST of those who visited the burnt airships missed seeing the tailplanes, which also fell about a mile away.

Two men have been arrested for selling aluminium relics.

"BUSINESS as usual" is on every shutter that has taken the place of a window, and the ordinary business of the shop goes on as if nothing had happened.

THE main discomfort suffered by residents in private houses along the Zepp. route in the suburbs is due to the scarcity of glass.

ONE of the raiders which visited the southern suburbs of London dropped three lights, which burnt brilliantly for well over a minute.

SIX bombs dropped in a Lincolnshire village only destroyed a fowlhouse and killed some chickens.

THE airship brought down in flames is said to be the one which dropped her bombs on the suburbs.

THE blazing airship was visible from a country town 60 miles away.

THE captured crew all wore lifebelts.

THE dead commander was wearing his Iron Cross.

THE captured airship commander asked to be allowed to telephone to someone in London who would let his wife know he was safe.

TWO women and two girls buried in the wreckage of their suburban house—completely smashed by a bomb—were extricated in their nightdresses, frightened but uninjured.

NO inquest is to be held on the dead Zeppelin crew, the Coroner considering that no useful purpose can be served, the Essex County Police endorsing his action.

FISHERMEN arriving at Esbjerg on Monday reported having seen four airships going south-east; apparently they were short of fuel, and one, damaged at the back, was accompanied by destroyers.

ESTIMATES of the time taken for the burning airship to fall vary from three to five minutes. The wreck burnt for two hours.

IT is extraordinary how many empty houses were the billets for bombs.

ONE of the propellers of the burnt airship fell about a mile away from the main wreck.

DURING the excavations of one of the wrecked houses in a Northern town, in which all the occupants succumbed, a cat suddenly strolled from underneath an overturned harmonium.

THE FLYING SERVICES FUND—Administered by THE ROYAL AERO CLUB.

THE Flying Services Fund has been instituted by the Royal Aero Club for the benefit of officers and men of the Royal Naval Air Service and the Royal Flying Corps who are incapacitated on active service, and for the widows and dependants of those who are killed.

The Fund is intended for the benefit of all ranks, but especially for petty officers, non-commissioned officers, and men.

Forms of application for assistance can be obtained from the Royal Aero Club, 166, Piccadilly, London, W.

Subscriptions.

	£	s.	d.
Total subscriptions received to Sept. 10th, 1916	10,840	19	8
Staff and Workers of Gwynnes, Ltd. (Twenty-fourth contribution) ..	8	8	4
Collected at the Westland Aircraft Works, Yeovil (Forty-ninth contribution) ..	0	18	3
Collected at Ruston, Proctor, and Co. Aircraft Works (Eleventh contribution) ..	1	10	0

Total, September 27th, 1916 .. 10,851 16 3

166, Piccadilly, W. B. STEVENSON, Assistant Secretary.

THE ROLL OF HONOUR.

THE Secretary of the Admiralty announces the following casualties:—

Killed.

Flight-Lieut. J. T. Bankes-Price, R.N.

Slightly Injured.

Flight-Sub-Lieut. E. B. Thompson, R.N.

The following casualties have been officially announced by the War Office:—

Killed.

Second Lieut. C. J. Beatty, R.F.C.
Second Lieut. E. W. Burke, R. Fus., attd. R.F.C.
Lieut. C. E. N. Cooper, Lincoln Regt., attd. R.F.C.
Capt. F. G. Glenday, North's Fus., attd. R.F.C.
Capt. F. E. Goodrich, R.F.C.
7396 2nd Air-Mechanic R. Hobbs, R.F.C.
8215 2nd Air-Mechanic W. H. Wagner, R.F.C.

Previously reported Wounded, now reported Died.

13074 2nd Air-Mechanic J. T. Langton, R.F.C.
3836 Corpl. W. G. Moore, R.F.C.

Died of Wounds.

Lieut. G. G. Bentley, R. Warwick Regt., attd. R.F.C.
Second Lieut. P. J. Smyth, Connaught Rang., attd. R.F.C.
7750 2nd Air-Mechanic J. F. Pearce, R.F.C.

Wounded.

Capt. K. A. Brooke-Murray, A.S.C., attd. R.F.C.
Second Lieut. P. S. Butterworth, R.F.C.
Capt. H. A. Harris, R.A.M.C., attd. R.F.C.
Second Lieut. C. C. Hayward, R.F.C.
Second Lieut. C. S. Hollinghurst, R.F.C.
Second Lieut. G. W. Howland, R. Irish Regt. and R.F.C.
Second Lieut. D. L. Reed, Sherwood For., attd. R.F.C.
Lieut. R. Speirs, Cameronians (Scot. Rif.) and R.F.C.
Second Lieut. H. Tatton, Yeomanry and R.F.C.
Capt. G. Taylor-Loban, Durham L.I., attd. R.F.C.
Capt. E. J. Tyson, R.F.C.
21492 2nd Air-Mechanic W. S. Lumsden, R.F.C.

Missing.

Second Lieut. J. V. Bowring, S. Lancs. R., attd. R.F.C.
Second Lieut. F. H. Bowyer, Queen's (R.W. Surrey Regt.) and R.F.C.
Lieut. L. R. Briggs, Lond. Regt. and R.F.C.
Lieut. W. H. S. Chance, Worcester Regt. and R.F.C.
Capt. G. L. Cruikshank, D.S.O., Gordon Highrs. and R.F.C.
Second Lieut. D. Cushing, R.F.C.
Second Lieut. C. Elphinstone, R.F.C.
Second Lieut. G. B. J. Firbank, R.F.C.
Second Lieut. J. H. Gale, R.F.C.
Lieut. L. B. Helder, R. Fus., attd. R.F.C.
Sec. Lt. F. E. Hollingsworth, A. and S. Highrs. and R.F.C.
Second Lieut. C. J. Kennedy, R.F.C.
Lieut. G. Klingenstein, R.F.C.
Second Lieut. T. P. L. Molloy, Dorset Regt. attd. R.F.C.
Lieut. R. R. Money, E. Yorks. Regt., attd. R.F.C.
Second Lieut. L. B. F. Morris, Queen's (R.W. Surrey Regt.) attd. R.F.C.
Second Lieut. O. Nixon, Essex Regt., attd. R.F.C.
Second Lieut. A. F. A. Patterson, R.F.C.
Second Lieut. A. L. Pinkerton, R.F.A., attd. R.F.C.
Lieut. R. A. Preston, Lincoln R. and R.F.C.
Lieut. T. Rees, R. Welsh Fus., attd. R.F.C.
Second Lieut. W. B. Saint, R. Scots and R.F.C.
Lieut. J. W. Sanders, Middlesex Regt. and R.F.C.
Capt. A. S. M. Summers, Hussars and R.F.C.
Second Lieut. F. G. Thierry, R.F.C.
Second Lieut. H. Thompson, R.F.C.
Second Lieut. H. M. W. Wells, R. Berks. Regt. and R.F.C.
Second Lieut. R. Wood, W. Yorks. Regt., attd. R.F.C.
Second Lieut. L. G. H. Vernon, R. Welsh Fus., attd. R.F.C.
13658 Corpl. W. Summers, R.F.C.

Previously reported Missing, now reported Prisoner of War.

3613 Sergt. H. Taylor, R.F.C.

Previously Unofficially, now Officially, reported Prisoners of War in German Hands.

Lieut. H. L. C. Aked, W. Yorks. Regt. and R.F.C.
Lieut. E. R. Farmer, Yeomanry and R.F.C.

Fatal Accidents.

Lieut. D. C. Beck, R.F.A., attd. R.F.C., was killed on September 21st when landing to inquire his position. Apparently he had not slowed the machine sufficiently, and one of the wheels catching in a rut the machine turned over, pinning the pilot beneath. A verdict of "Accidental Death" was recorded at the inquest.

On the same day Lieut. W. H. Stuart Garnett, R.F.C., was killed at Upavon.

At an inquest on September 21st relative to the fatal accident to Lieut. H. M. Kendrick on September 18th, it was stated that the machine was in perfect order. The accident was probably caused by the machine striking the top of a tree. A verdict of "Accidental Death" was returned.

Lieut. Sidney Woodrow was killed near Birmingham on September 23rd. A police constable who saw the accident said the machine seemed to nose-dive from the clouds. The Coroner expressed the opinion that the deceased was seized with a fainting fit which caused him to lose consciousness. A verdict of "Accidental Death" was recorded.

Lieut. Percy Main, R.F.C., was also killed on Saturday while training.

New Chief of the R.A.F.

It was announced on September 21st that Mr. Henry Fowler, A.M.I.C.E., M.I.Mech.E., M. Iron and Steel Institute, a Deputy Controller of Production at the Ministry of Munitions, had been appointed Superintendent of the Royal Aircraft Factory in succession to Lieut.-Col. Mervyn O'Gorman, C.B., who is now Consulting Engineer to the Director-General of Military Aeronautics. Mr. Fowler, previous to going to the Ministry of Munitions, was chief mechanical engineer of the Midland Railway. Although Mr. Henry Fowler has been associated with railways since he was apprenticed to the Lancashire and Yorkshire Railway in 1887, he has made a close study of internal combustion engines, in which subject he is a recognised authority. He was associated with the motor vehicle trials of the Liverpool Self-Propelled Traffic Association in 1898, 1899 and 1901, and has also done a great deal of honorary work in connection with the trials of the A.C.G.B.I., now the R.A.C. With the L. and Y. Railway Mr. Fowler rose to the position of Gas Engineer, when in 1900 he went to the Midland Railway. In 1904 he became assistant manager of the M.R. loco. works, in 1907 works manager, and in 1909 chief mechanical engineer.

ANSWERS TO CORRESPONDENTS.

If in doubt about anything aviatric, write to "FLIGHT" about it.
R. V. H. (Southampton).

It is impossible to say exactly what horse-power is required to propel a Zeppelin at a speed of 60 m.p.h., as this depends on the type and size. If we take it that the length of the Zeppelin is 680 ft. and its maximum diameter 67 ft., which figures would appear to tally very well with reports concerning Zeppelins of the latest type, an approximate estimate may be made of the resistance at 60 m.p.h. According to tests carried out at the R.A.F., a model of the D.B. Naval Airship No. 1, measuring 17 ft. in length and 1 ft. 7½ ins. diameter, offered a resistance of 0.31 lbs. at a velocity of 27 ft. per sec., or approximately 18.5 m.p.h. This model had conical ends and a cylindrical central portion. The total resistance of this model is stated to vary as $0.00046V^{1.986}$, or, in other words, the resistance varies less than as the square of the speed. Since, however, the Zeppelins are not of cylindrical but of polygonal section, and have moreover gondolas, tail planes, guns, &c., projecting outside the periphery of the polygon, we shall take it as sufficiently accurate for an approximate estimate that the resistance varies as the square of the speed. Besides, the modern Zeppelins do not appear to have a straight-sided centre portion, so that the resistance will probably be somewhat less on this account and help to make up for the resistance of the control planes, &c., the resistance on which might otherwise be somewhat in excess of the allowance made by raising the index of the velocity from 1.98 to 2.

The resistance of an airship 680 ft. long and having a maximum diameter of 67 ft., cruising at a speed of 60 m.p.h., is then found from the equation—

$$\frac{\text{Force on model (lbs.)}}{\text{Force on full size airship}} = \left(\frac{v}{40V}\right)^2$$

where v = velocity in m.p.h. at which model was tested, $\frac{1}{40}$ is the scale of the model and V = the velocity in miles per hour of the full size airship. We can therefore write $0.31 = \left(\frac{18.5}{40 \times 60}\right)^2$, from which $F = 5,230$ lbs. approximately.

As obviously the thrust must equal the resistance, we obtain the required horse-power from the formula $H = \frac{Tv}{550 E_p}$, where

T = thrust in lbs., v = speed of the airship in ft./sec., and E_p = the efficiency of the propellers, expressed as a decimal. Therefore the horse-power required, assuming a propeller

efficiency of 75 per cent. = $H = \frac{5230 \times 87.6}{550 \times .75} = 1,110$ h.p.

The Zeppelin airships of the latest type are said to be fitted with motors developing over 1,000 h.p., so that it appears reasonable to suppose that they can and do attain a speed of somewhere in the neighbourhood of 60 m.p.h.

J. M. C. (Luton).

The reasons why a straight wing (one with no dihedral) possesses a certain amount of lateral stability when moving in a rectilinear path in still air can, perhaps, be best explained by a numerical example. Suppose, for instance, that the machine is travelling at a velocity of 100 ft./sec., and that by some force it is made to roll to such an extent that the wing tip moves downward a distance of 2 ft. in 1 sec. It will now be clear that the wing tip virtually has its angle of incidence increased, since it moves down a sloping path which represents the hypotenuse of a right-angled triangle, of which the other two sides are 2 ft. and 100 ft. respectively. For the case in question we may therefore write Tangent of

angle = $\frac{2}{100} = 0.02$. Angle corresponding to an $0.02 = 1.8^\circ$ approximately. The dropping wing tip therefore has its angle of incidence increased by 1.8° while the opposite wing tip has, of course, its angle of attack similarly decreased. As for small angles of attack the lift is proportional to the angle of incidence, it will be seen that a couple is set up, which tends to prevent rolling of the aeroplane.

E. S. (rd) writes:—In the "Answers to Correspondents" page of "FLIGHT" of September 14th, an inquirer—H. C. B. (King's Lynn)—appears to have asked if it is possible to loop with the undercarriage pointing towards the centre of the circle. I quite believe (but would not be certain) I have seen loops made as above described. Perhaps some other reader

living in this district will be able to say whether the above is correct or not."

F. W. D. (Abingdon).

The pitch of an airscrew can be found in the following manner: Place the airscrew on a plane surface such as a

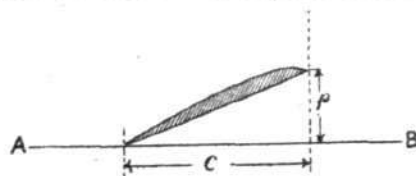
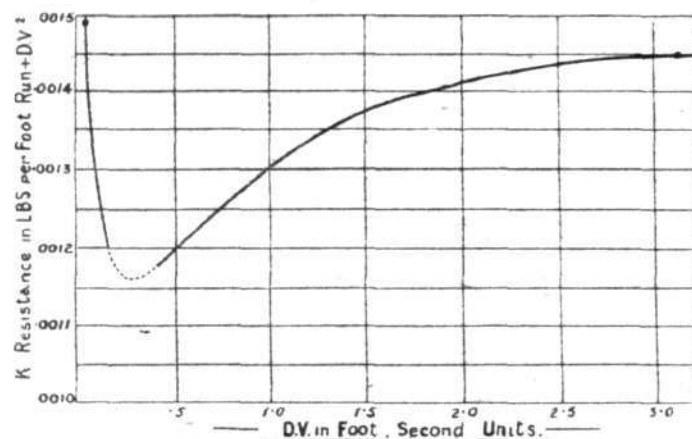


table top, with the driving face downwards. The distance c , or the projected width of the blade, is a part of the circumference at the point measured, and the height p of the leading edge of the section above the base line is part of the pitch. The pitch is then found by the formula $P = \frac{2\pi rp}{c}$,

where P = pitch, in inches, r = the distance from the axis of the propeller to the point measured, in inches, p = part pitch in inches, and c = part of circumference in inches.

A. M. R. (Manchester).

The resistance of smooth wires is expressed by the equation $F = KDV^2$, where F = force per unit length of the wire, D = diameter of the wire in feet, and V = velocity of the wind in ft./sec. K is not a constant, however, but a function of (DV) . The accompanying graph taken from the



annual report of the Advisory Committee for Aeronautics, 1912-13, gives the various values of K corresponding to various values of the product DV . To take an example: If it is desired to find the resistance per foot run of a wire 0.1 in. dia. at a speed of 100 m.p.h., or 146 ft./sec., $D = 0.1$ in. = 0.0083 ft., $V = 146$ ft./sec. $\therefore DV = 0.0083 \times 146 = 1.2$. From the graph it will be seen that the value of K corresponding to a value of DV of 1.2 is about 0.00133. The resistance per foot run at 100 m.p.h. is therefore = $0.00133 \times 0.0083 \times (146)^2 = 0.235$ lbs.

C. D. (Southport).

We think you are in error as to the make of "dope" which has caused the symptoms you mention. For counteracting the effect of dope fumes a useful prescription is Ac. Pot. Tart, 10 drams; Glusidum, 10 grains; Soluble Essence of Lemon, 30 drops; Aq. (water), 200 ozs. A small glassful should be taken occasionally as a drink.

R. F. C. (Whalley).

There is no actual weight limit for pilots, but other things being equal the lighter the better. We do not know of any chart such as you inquire for.

H. B. M. (Lincoln).

If you were given a commission, the Government would arrange for your tuition. As to whether you could get a transfer depends upon the view taken by your commanding officer, through whom your application must go.

R. M. W. (Manchester); X. Y. Z. (Woolwich).

You can obtain the necessary application forms from the Secretary to the Admiralty, Whitehall, S.W. There is no such grading at "Pilot." If you are accepted as a "Probationary Flight Officer," the Admiralty will arrange for your tuition.

AIRISMS FROM THE FOUR WINDS.

RECENT contributions received by the Lord Mayor towards the Kitchener Memorial Fund, which is well past the £300,000 mark, include £250 from the Coventry Ordnance Works, £100 from the Duke of Westminster; £41 14s. from the officers, N.C.Os. and men of a Squadron, R.F.C., per Major E. N. Gossage; £23 9s. 6d. from the officers, N.C.Os. and men of a Squadron, R.F.C., per Captain J. A. Cunningham.

WHY the lady-drivers attached to the R.F.C. headquarters should be called "Flying Women" is not quite clear. This is a ha'penny paper airism.

ANYWAY they look smart in their khaki uniforms, and the Royal Flying Corps badge on their sleeves gives quite a military touch.

THE New York Flying Yacht Club was recently opened with an aviation luncheon to which several of the guests flew on their flying boats.

SIR CHARLES CHEERS WAKEFIELD has announced to the Court of Aldermen that his decision not to allow himself to be nominated as Lord Mayor of London for a second year of office, must be regarded as final.

THE policeman who "arrested" the captain and crew of the derelict Zepp. obtained promotion and an Order of Merit—presumably local.

How about the "Special" who took the job on first?

WHAT was the matter with letting the Zepp. commander telephone his "friend," up to the point of giving the 'phone number? The latter scent *might* have proved worthy of being followed up.

Nor much merit in closing the door too quickly upon such possibilities.

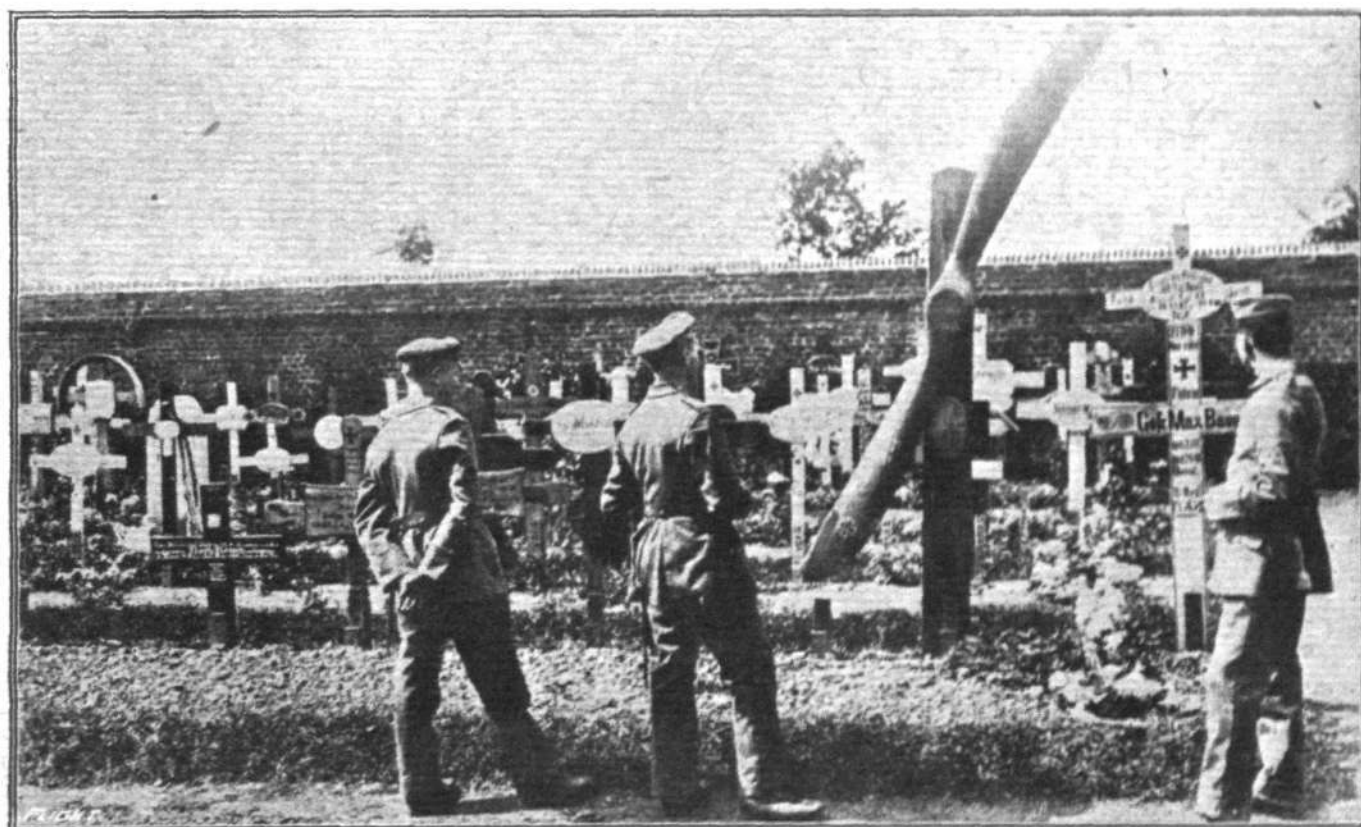
To commandeer premises, goods, chattels and what not from private citizens in the name of the King for the direct

purposes of benefiting the National cause, and then to refuse all redress and bandy words as to payment or compensation being "by act of grace," seems to ordinary folk as if such an act in these days of the twentieth century might well be associated with "dis" as a preface.

We wonder how the R.F.C. folk like the "ramp" in the King's name.

QUITE a happy summary for a preliminary basis of Peace appears to have been gotten together by the *Cologne Gazette*. True, it is supposed to have been compiled from British sources, but it should nevertheless act as a decent sort of tonic upon the flagging subscriptions to the new German War Loan. There are a few minor points left out of the terms, such as, by way of instance, the re-arrangement of the ownership of one-time German Colonial possessions; but, subject to such additions as may be found expedient by the Allies, we are not inclined to quarrel with the summary taken broadly. The *résumé* includes the following:—

"An English Bishop proposes a Criminal Court composed of neutrals—presumably with Herr Wilson as president—and its condemnation would simply be enforced by the armed power of the Entente States. The Entente is at one in the decision not to negotiate either with the Kaiser or Herr von Bethmann-Hollweg. Herr Asquith has himself officially proclaimed that he will take his vengeance on the Kaiser personally. Almost everywhere one meets the pleasant intention to level Berlin to the ground, to destroy our industrial centres, to burn our warships—curiously enough we are still to be left a little army—and to divide up our mercantile marine among the band of robbers. But the main thing is to impose upon us a war indemnity, which Herr Crammond—who is secretary of the Liverpool Exchange, and therefore understands figures—reckons at only £8,600,000,000. Until payment is made the thumbscrew is to be applied until we are black in the face. An army of occupation, consisting doubtless of Zulus, Cingalese or even white Englishmen, is to remain in the country to eat everything up, and meanwhile the



WHERE A NUMBER OF THE GERMAN SOLDIERS ARE BURIED AT DOUAI.—Some of the Kaiser's men examining the headstones over the graves, particularly the one with the aeroplane propeller, which indicates the spot where the last remains of a German air pilot rest.

starvation blockade is to continue, so that we may not fall back into our old life of luxury. How long is it to last? Herr Maeterlinck, the poet whom we used to fête, tells us. 'Happily,' he says, 'the Germans are an industrious people, and we will compel them for 80 or perhaps 100 years to work for us. The Germans will be the slaves of Europe.'

"THE Three Stinsons, in their marvellous triple looping display," may be one of the stunts in America soon, for the Sisters Stinson—Katherine and Marjorie—have now been joined in their looping exhibitions by their brother, Eddie.

BROTHER STINSON bids fair to become as skilled in aerial gymnastics as his sisters, judging from the feats he has been accomplishing recently on his tractor biplane.

THIS latter machine, by the way, is a speedy little machine designed by and constructed under the supervision of our old friend, Walter L. Brock. It follows European practice very closely, and is equipped with a 50 h.p. Gnome.

C. H. STEVENS, who, with H. Sykes as instructor, has been learning to fly the Martinsyde biplane, took an excellent "ticket" the other evening at Hendon. His distances from the "bull's-eye" were 29 and 19 yards respectively—not so bad for 4½ hours' tuition on a fast tractor 'bus. Stevens celebrated the event a couple of days later by taking his wife for an aerial trip on the Martinsyde around over the surrounding country!

AND all this after a nasty aeroplane smash some time back which resulted in serious injury to his legs.

HIS MAJESTY THE KING saw the Royal Flying Corps defeat the Rest of Aldershot Command at football at Aldershot on Saturday.

It must be a grim—not to say ghoulish—kind of humour which prompts a Surveyor of Taxes to claim for excess profits duty on a municipal cemetery. Enough to make the tenants turn in their graves. But it would appear that Kensington was able to successfully resist the super-tax, as the borough treasurer demonstrated that the "profits" only gave a return of 2·23 per cent. on the capital invested and Parliament allowed 6 per cent.

WHICH CREW?

"ZEPPELIN. We crew."—The commander of the derelict airship to the constable who "arrested" the raiders.

'Twas English, Hans,

But was it true?

Foiled in your plans,

You cursed; WE crew.

(From the "Office Window," *Daily Chronicle*.)

To be able to run on an artificial leg is somewhat of an achievement. Yet there can be no doubt any longer that it is possible, as demonstrated by Marcel Desoutter some time ago. It should be pointed out that the leg was made by Desoutter himself, and embodied several new improvements.



S. Daucourt, the aviator who last week flew to Essen and "distributed" some bombs over Krupp's works.

DESOUTTER's methods are very thorough in getting the data for constructing artificial limbs. For this purpose he has called into use the cinematograph and obtained pictures at a rate very much above that normally employed. These show, when projected at the ordinary speed, the movements of men at a very slow rate, which enables him to follow to the minutest details what takes place during every movement of progression. The action of all the different muscles and joints are studied in this manner, and the result is, as already mentioned, that he has produced an artificial leg on which it is not only possible, but comparatively easy, to run.

THAT Desoutter's success is in no small measure due to the fact that he is himself minus one of his legs since his unfortunate accident some years ago, goes without saying, since he is able to test for himself any new improvement and so find out where "the shoe pinches." That in itself is, of course, a great asset, but it is doubtful even then if he would have been able to find the best mechanical solution of the problem of imitating nature's engineering methods had he not also been a clever *mechanicien*. It should be mentioned that his brothers, who are also of a mechanical turn of mind, have been of great assistance to him.

MR. F. P. RAYNHAM, the well-known Brooklands pilot, is at present in a northern latitude on a special mission. During his absence the testing of Martinsyde machines is in particularly good hands, Mr. H. Barnwell, of Vickers, acting as *locum tenens*.

To state at present the output of an aeroplane factory would be to court certain disaster in the form of irate censors, enforcement of punishment for breach of the regulations laid down in the Defence of the Realm Act, &c., but at the risk of being shot daily at the Tower for a fortnight we are telling our readers that the output of the Blériot works is one machine per month for every 10 employees, counting women workers and boys; and taking these at —, the output is —, which is, we think, somewhat of a record. So now you know. Anyway, the Blériot works have not grown very much smaller lately. That's all right. We know it is an Irishism, but it's an Airism of counterweight.

BUT there is already a new large factory building "somewhere in England," and when this is completed the output per 10 men will probably be exceeded, and the total output very greatly increased accordingly. Under present conditions the result already achieved is one of much credit to Mr. Chereau, the general manager, and Mr. Davidson, the works manager.

THE POINT OF VIEW.—The East Coast householder took his last look out at the night before retiring. Black masses of angry cloud were scudding across the moonlit sky. On the horizon a Scotch elm, plainly silhouetted, bent almost double under the fury of the gale. From a tree in his own garden a branch had been torn off, and carried halfway across the lawn. Part of the garden fence had been blown down, and under each fresh onslaught of the gathering gale the rest groaned as if in anticipation of sharing its fate. In the house itself every door and window rattled.

He turned in with a sigh of content.

"Another peaceful night, thank goodness," he said to himself.

A WASTED LIFE.—KAISER (to Count Zeppelin): "Tell me, Count, why didn't you invent something useful, like the 'Tanks'?"—*Punch*.

CLAYBURY ASYLUM stands on one of the highest points in Essex, therefore it was, of course, just the very spot to have a bonfire 8 ft. high burning on the night of the record raid. The dear old fire-tender, with the usual dray-horse intelligence of pulling whilst there is anything about to pull, pleaded that the fire had been burning the whole 15 years he had been there, and got fined £5. The Phil May "Come inside" would fit like a glove, but it ought not to apply to the gardener. Orders are orders, and the man seems to have suffered through the lack of them as much as through the lack of common sense in his own cranium.

SINCE then the fire has been put out, and instructions given that it should not be lit again. If somebody again forgets to issue orders for its relighting when the war is over,

It may grow through the coming years until it assumes colossal proportions. Then—perhaps 15 years the other way—somebody will suddenly realise that it ought to be set on fire, and things will resume the normal again. Wonderful.

OWLS are the latest to join the ranks of animals that object to Zepp. raids. A pair of tawny boys of that ilk, a correspondent to a London newspaper says, are in a tree near his house, and when Zepps. are about they use language like that of a skipper chased by a Hun submarine. Wonder what it is like?

TEN YEARS AGO.

Excerpts from the "Auto." ("FLIGHT's" precursor and sister Journal) of September 22nd, 1906. "FLIGHT" was founded in 1908.

M. SANTOS DUMONT ACTUALLY FLIES.

On the 13th instant, M. Santos Dumont's aeroplane actually raised itself from the ground in virtue of its own proper velocity and made a flight, short it is true (the flight being only some seven or eight metres in length), but still an actual free flight through the air. As usual, M. Dumont was out early on this occasion, and at ten minutes to eight he started his motor and ran the aeroplane down the field at Bagatelle, the propeller, however, only revolving at about 900 r.p.m., the consequence being that the lifting force was insufficient, and the aeroplane was brought back again to the starting point. At 8.40, M. Santos Dumont started again, this time with the propeller revolving at some 1,000 r.p.m., and the

machine attaining on its three wheels an estimated velocity of about 40 kilometres per hour. The aeroplane advanced at this speed across the field for about 100 metres, when M. Dumont tipped the tail of the machine so as to raise it in the air, and immediately the two front wheels rose about 2 metres, the rear wheel finally also leaving the ground. It was an interesting moment; the first time in fact, as far as we are at present aware, that actual mechanical free flight has been accomplished in Europe. The aeroplane sank again towards the ground, on which it landed with something of a shock, the propeller being damaged, the propeller-shaft bent, the bamboo framework broken, and altogether the machine practically smashed up. M. Santos Dumont is at once starting to rebuild the machine, and the new design will involve the raising of the propeller.

M. ARCHDEACON'S BICYCLE EXPERIMENTS.

M. Archdeacon has been experimenting with the tractive effect to be obtained on an ordinary 6 h.p. motor bicycle by means of an aerial propeller, or, to be more correct, tractor, mounted in front. The total weight of the bicycle is 70 kilogrammes, and when ridden by Anzani, the well-known motor bicyclist, the total weight of rider and machine amounted to 150 kilogrammes. After starting up the engine, the bicycle was found to glide away very regularly and smoothly as soon as the propeller was thrown into gear, and ultimately the machine developed a speed of 79.3 kilometres per hour. M. Archdeacon is so satisfied with this result, that he is proceeding to apply the same engine and propeller to an aeroplane.



Grahame-White School, Hendon.

STRAIGHTS with instructor last week: Messrs. Kaiger, Norris and Whiteman. Circuits: Messrs. Cockell, Culver, Edwards, Fisher, Green, Hodgkinson, Lord, Munro, Payne, Ranson, Robertson, Rogers, Saunders, Steves, Styles, Sutherland, Travers, Woods and Zambournis.

Instructors: Messrs. Manton, Winter, Biard and Pashley.

Hall School, Hendon.

PUPILS out last week:—With Stanley G. Cownie: Messrs. Blake, Heathcote, Pugh, Foster, Course and Yuill. With Cecil M. Hill: Messrs. Dutton, Cowell, Packman and Lieut. Malden. With Gerald Smith: Messrs. Lambert, Barton and

Bateman. With Fred J. Glegg: Messrs. Mayer, Smith, Maude, Foster, Blake, Yuill, and Pugh. Messrs. Smith and Bateman moved on to S. Smith.

Hall Government type tractors in use.

Bournemouth School.

PUPILS rolling alone last week: Messrs. Ross and Allen. Straights alone: Mr. Burry. Half-circuits alone: Messrs. Davies and Montgomery Holland. Figures of eight and circuits alone: Messrs. Brandon, Constant, Owen, and Montgomery.

Instructors Messrs. S. Summerfield and E. Brynildsen.

35, 45 and 60 h.p. Caudrons in use.

Certificates taken by Messrs. Brandon, Constant and Owen.

Tribute from the Enemy.

THE following tribute to the air supremacy of the English and French on the Western front is contained in a telegram from German Headquarters to the *Frankfurter Zeitung*:—

"The severe rainy weather which began last night permits the expectation of some relief by impeding the very harassing air activity of the English and French."

German Seaplane Sunk.

A DANISH fishing cutter, the "Nordlyset," which arrived on September 21st, at Esbjerg—having been missing for some days—reported, according to the *Berlingske Tidende*, that a German aeroplane was wrecked at the Dogger Bank three days previously. Attempts were made by the crew of the cutter to rescue the two aviators, but owing to the heavy sea they failed, and the aeroplane was totally wrecked and the two men drowned.

Another Apostle of Frightfulness.

"It is against England that our principal efforts must be directed. Every Zeppelin that drops destruction on London is an instrument of righteousness. England must be attacked more and more from the air, since our glorious armies which annihilate all other enemies cannot reach the shores of our most dangerous foe." Thus the King of Wurtemberg at a dinner at Stuttgart a few days ago.

Lieutenant Noel's Return to Salonica.

MR. G. WARD PRICE, writing from Salonica, on September 22nd, gives some further details of Sub-Lieut. Noel's flight from Salonica to Bucharest. He says:—

"Lieut. Noel, the French airman of Hendon, who made a flight to Bucharest and back, was decorated by General Sarrail with the Legion of Honour to-day. He flew from Salonica to Bucharest in five hours, and did the return journey in five and a half hours. The flight back was made in a storm, with clouds hanging round the mountain-tops.

"Between Sofia and Salonica I thought I was done in," said Noel, who speaks colloquial English perfectly. "My engine nearly stopped with water in the carburettor from the clouds. I was too far off to reach our lines, so the only thing was to dive through the clouds in the hope of striking a possible landing-place, though this chance was small. I made an almost vertical volplane through the only hole in the clouds I saw. It brought me within 200 ft. of the side of the valley on which was a company of Bulgarian soldiers. They were terrified by this sudden swoop of an aeroplane out of the mists so close above them and bolted in all directions. Luckily, as I dived into the valley, my motor re-started, and I reached Salonica with hardly a single drop of petrol in the reservoir."

Personals

Casualties.

Second Lieutenant EDWARD WILLIAM BURKE, Royal Fusiliers, attached R.F.C., reported killed, was the only son of Mr. and Mrs. William C. Burke, of Cloonee, Ballinrobe, co. Mayo.

Second Lieutenant GUY N. COUSANS, Royal Inniskilling Fusiliers attached R.F.C., who was killed on September 19th, was the only son of the late H. E. Cousans, and stepson of Mrs. Cousans, of Kimbolton House, Huntingdon.

Captain FERDINAND GONCALVES (JACK) GLENDAY, Northumberland Fusiliers, attached R.F.C., who has been killed, was the fourth son of the late Mr. Alexander Glenday, of Brighton, and nephew of the Rev. E. A. Glenday, Vicar of Holy Trinity, Bury, with whom he resided after the death of his father. Captain Glenday was educated at Brighton College and St. Bede's Schools, and afterwards at Keble College, Oxford, taking his degree in 1914, with honours in modern history. He volunteered at the outbreak of the war. Captain Glenday, who had previously been wounded, was 24 years of age.

Lieutenant HAMISH STRATHY MACKAY, R.G.A., attached R.F.C., whose death was mentioned last week, was killed in an aerial combat on September 9th. He was educated at Routtenburn and Sedbergh, and before the war was qualifying as a practical engineer. He was gazetted to the Royal Garrison Artillery as second lieutenant in August, 1914, and was attached to the R.F.C. on February 10th, 1916, proceeding to the front the following month.

Lieutenant FRANCIS CAMPION MULCAHY-MORGAN, Royal Irish Rifles, killed, was the fourth son of Mr. Edward S. Mulcahy-Morgan, Lara House, Rathdrum, co. Wicklow, and a brother of Captain E. S. Mulcahy-Morgan, Royal Irish Rifles, and Captain T. W. Mulcahy-Morgan, Royal Irish Fusiliers and R.F.C.

Second Lieutenant DILLWYN PARRISH STARR, Coldstream Guards, killed on September 15th, was the second son of Louis Starr, M.D., LL.D., and Mrs. Starr, of Philadelphia. He was born in 1884, and educated at Groton School and at Harvard, where he was conspicuous as an athlete, playing for four years in the University football team. At the outbreak of war he volunteered for service with the American Volunteer Motor Ambulance Corps, and for several months drove an ambulance for that unit, then attached to the Second French Army. In December, 1914, he enlisted as a petty officer in the Armoured Motor Car Service, R.N.A.S., and served with the Duke of Westminster's squadron in France, taking part in the battle of Neuve Chapelle. In May, 1915, he was recommended for a commission in the same service, and was gazetted sub-lieutenant. Soon afterwards he was sent to Gallipoli, where he served with distinction in the trenches at Suvla Bay as a machine-gun officer. In December, 1915, he returned to England, and was given a commission in the Coldstream Guards. He joined the Expeditionary Force last July.

Lieutenant G. GREENWOOD BENTLEY, R. Warwicks and R.F.C., whose death took place on September 17th, as the result of an accident, when landing in France, had only been out at the front there six weeks. He was the son of Mr. J. F. Bentley, of Whitstable.

Lieutenant W. H. STUART GARNETT, who was killed at the Central Flying School on September 21st, was the second son of Dr. and Mrs. William Garnett, of the Chestnuts, Hamp-

stead. He was educated at St. Paul's School and Trinity College, Cambridge; he was a major scholar of Trinity, a ninth wrangler in his second year (1902), and in the following year he was placed in the First Class of the Mechanical Science Tripos. He also won the Wrangham Medal. Although he has died at the age of 34, he had lived a full and varied life. In 1903 he went to Wallsend-on-Tyne, where the Hon. Sir Charles Parsons was perfecting his marine turbine, on which Mr. Garnett wrote a book, which ran through several editions. He then decided to read for the Bar. After being called at the Inner Temple in 1905, he practised for some time, travelling the Western Circuit, and for a period he was a master at Eton. Later on he became interested in the national insurance scheme, on which he wrote a book in association with Mr. Arthur Comyns Carr. Subsequently Mr. Garnett abandoned his practice on his appointment as assistant legal adviser to the National Insurance Commission. An enthusiastic Alpine climber and an ardent yachtsman, he took a keen interest in the Boy Scout movement, being particularly active in promoting sea scouting, on which he wrote a book, which has had a wide circulation. In order the better to devote himself to work among boys, for whom he had founded a club at Shadwell, he lived for some years—and down to the outbreak of war—in a workman's flat at Limehouse, in which district the news of his death will be received with the deepest regret. In two successive years he won the Caymore Cup of the Royal Cruising Club. When war broke out, Mr. Garnett obtained the loan of a yacht, which he manned, both as to officers and men, mainly with Cambridge graduates and undergraduates, with a sprinkling of Sea Scouts. It was afterwards engaged in the mine-sweeping service. In the summer of last year, Mr. Garnett, who had attained the rank of lieutenant-commander, relinquished his naval duties in order to join the R.F.C. He acted as an observer for several months in France, where his inventive genius had effective play, with the result that he was recalled to this country and joined the experimental staff of the Central Flying School at Upavon. Early in the present year he qualified as pilot. Lieutenant Garnett married in August of last year Sybil, the only daughter of Mr. and Mrs. Bradley, of Streetley, Warwickshire. Dr. and Mrs. Garnett are at a base hospital in France with their youngest son, who was dangerously wounded about three weeks ago.

Lieutenant PERCY MAIN, R.F.C., killed while flying on Saturday, was a Portsmouth man. He joined the R.F.C. for clerical duties, and later obtained a commission in the Hampshire Regiment. A month ago he rejoined the Flying Corps, and was completing a course when he was accidentally killed.

Married and to be Married.

An engagement is announced between Flight-Sub-Lieutenant NORMAN E. WOODS, R.N.A.S., younger son of Mr. William E. Woods, of Rangiora, Arthur Road, Wimbledon Park, and Sydney, and FLORENCE INNES, youngest daughter of H. I. PERKINS, I.S.O., F.R.G.S., F.G.S., Surveyor-General, British Honduras, and Mrs. PERKINS, of Wimbledon Park, and granddaughter of Major-General Edward Norman Perkins, Bengal Staff Corps.

Last week at Christ Church, Lancaster Gate, Captain (Temporary Major) ARTHUR EDWARD MAITLAND, Essex Regt., elder son of Mr. A. W. Maitland, of Cricklewood, Canterbury, was married to Miss DOROTHY MARGARET POLSON, only daughter of the late Mr. Daniel Maclean Polson and of Mrs. Polson, of Invervar, North Berwick.

R.N.A.S. Raids.

THE following was issued by the Secretary to the Admiralty on September 23rd:—

"The enemy aerodrome at St. Denis Westrem (near Ghent) was again attacked yesterday (September 22nd) by a squadron of naval aeroplanes. Results appeared to be highly satisfactory.

"Reliable reports now to hand show that very considerable damage and many casualties have been caused by the previous bombardments of this objective.

"In the early hours of this morning (23rd) the enemy aerodromes at Ghistelles and Handzaeme (near Ostend) were heavily bombarded by a naval aeroplane squadron. All machines returned safely."

AIRCRAFT WORK AT THE FRONT.

OFFICIAL INFORMATION.

British.

General Headquarters (France), September 19th, 11.7 a.m.

"Since last night's report five more of our aeroplanes have failed to return."

General Headquarters, September 19th, 9.45 p.m.

"A hostile balloon was brought down by our artillery east of Rausart."

War Office, September 19th.

"*Salonica*.—The enemy camp at Prosenik was bombed by our aircraft on September 18th, with apparently successful results."

War Office, September 20th.

"*Salonica*.—On our Struma front our aircraft carried out a raid on Drama, and bombs were dropped on railway rolling stock and stores."

General Headquarters, September 22nd, 10.47 p.m.

"There was great aerial activity yesterday."

"In the course of the fighting two enemy machines were destroyed and another forced to land in a damaged condition."

War Office, September 22nd.

"*Tigris Line*.—During the night of the 18th-19th instant our aeroplanes heavily bombarded an enemy aerodrome in the Shumran bend of the Tigris (above Kut-el-Amara)."

General Headquarters, September 23rd, 10.50 p.m.

"There was very great aerial activity yesterday. A highly successful raid by about fifty of our machines was carried out on an important railway junction, where much damage was done, two trains containing ammunition being destroyed and many violent explosions caused. A number of other raids on enemy railway works and sidings, aerodromes, and other points of military importance were equally successful."

"In addition, many fights took place in the air, in the course of which three hostile machines were destroyed and five others driven to earth in a damaged condition, besides many others which broke off in the middle of the fight and were seen to be descending steeply, but could not be watched to the ground owing to our machines being too busily engaged."

"Five of our machines are missing."

War Office, September 23rd.

"*Salonica*.—Our naval aircraft dropped bombs on enemy transport near Drama, with apparently good results."

General Headquarters, September 24th, 11.58 p.m.

"Five bombing raids were carried out yesterday by our airmen against railway stations on the enemy's communications, much damage being done."

"In the course of an air fight one of our airmen collided with his opponent. The hostile machine fell vertically. Our machine fell for several thousand feet, when the pilot managed to regain control, and recrossed the lines safely, flying over 30 miles with an almost uncontrollable machine. In all five hostile machines were destroyed yesterday, and two others driven down damaged. Five of our machines are missing."

General Headquarters, September 25th, 11.40 p.m.

"Yesterday six enemy aeroplanes were destroyed in air fights, and at least three others were driven to earth in a damaged condition. Three of our machines are missing."

French.

Paris, September 20th.

"Yesterday one of our pilots brought down a German aeroplane, which fell near Moisains (north of Péronne)."

"*Salonica*.—One of our air squadrons dropped a large number of bombs on Monastir."

Paris, September 22nd. Evening.

"During September 21st one of our aeroplanes dropped on the aviation sheds of Habsheim eight bombs of 120 mm., which hit their mark."

"An enemy aeroplane was brought down as the result of a combat in the air by one of our pilots between Combles and Morval."

Paris, September 23rd. Afternoon.

"On the Somme front our airmen yesterday fought 56 engagements, in the course of which four enemy machines were brought down, while four others were seen to fall in a damaged condition, but their descent could not be followed to the ground. Two other machines were also obliged to come down. During these fights Warrant Officer Dorme brought down his eleventh German machine in the neighbour-

hood of Goyancourt. Lieut. Deullin brought down his seventh machine south of Doungt. Warrant Officer Tarascon brought down his sixth aeroplane south-west of Hergny. The fourth German machine reported as having been brought down came crashing to the ground south-west of Bocquigny. In the region of Verdun Warrant Officer Lenoir, attacking a German machine at very close quarters, brought it down in its lines north of Douaumont. This is the tenth machine brought down by this pilot."

"Our bombarding squadrons also displayed great activity along the entire front. In Belgium one of our machines dropped four bombs on hutments in the Forest of Hauthulst. In the region of the Somme a group of 16 French machines bombarded the railway stations of Fins, Epehy and Rosel, and the aerodrome of Hervilly and dropped 80 bombs of 120 mm. North-east of Soissons a dépôt of enemy motor cars received 30 bombs."

"Warrant Officer Baron, accompanied by a bombardier, left his aviation camp yesterday evening at 7.15 and reached Ludwigshafen, in the Palatinate, where three bombs were dropped on military establishments. Continuing their route, the airmen dropped three more bombs on an important factory at Mannheim, on the right bank of the Rhine, where a vast fire and several explosions were noticed. Our airmen returned at 12.50 a.m."

"Finally, last night one of our dirigibles bombarded the railway lines in the region of Marcoing, south west of Cambrai."

Paris, September 24th. Afternoon.

"Yesterday the enemy airmen having shown more activity than usual, our chasing squadrons delivered on the greater part of the front veritable aerial battles. Our pilots gained great successes and indisputably had the upper hand of the enemy. On the Somme front there were 20 engagements. Four enemy aeroplanes were brought down. One fell in the Vaux Woods, two others successively attacked by Sub-Lieut. Guynemer came down in flames after some minutes' fighting. Sub-Lieut. Guynemer consequently brought down the same day his seventeenth and eighteenth aeroplanes. The fourth machine crashed to earth south of Miserey. Three other German machines were seriously hit and fell wrecked near Estrées and in the region of Péronne. Four enemy machines were compelled to come to earth in their own lines."

"It is also confirmed that one of the German aeroplanes given as seriously hit on September 22nd was brought down between Miserey and Villers Carbonnel. More to the south, between Chaulnes and L'Avre, six German machines were brought down. One of them fell in flames near Chaulnes in the course of an engagement between four of our machines and a body of six enemy machines; the second fell at Licourt, the third at Par Villers, the fourth was seen crashing to earth south of Marchelpot, the fifth and sixth were brought down by the same pilot in an engagement between one of our squadrons and six German aeroplanes, and they fell in the region of Andechy, one of them in our own lines. In the region north of Chalons a Fokker fell in flames near our own lines, and another Fokker appears to have been seriously hit. In the Verdun region an enemy aeroplane was fired at by machine guns at close quarters, was winged, and descended on to Pepper Hill. East of St. Mihiel a Fokker dived vertically into its own lines. In Lorraine one of our pilots pursued a German machine for 20 kilometres (12 miles) into its own lines, killed the passenger, and compelled the machine to descend. Another enemy machine came down in the Forest of Gamecy. Finally, in the Vosges two enemy aeroplanes nose-dived into their own lines in an abnormal manner after fights with our pilots."

Paris, September 24th. Evening.

"During the night of September 23rd-24th seven of our aeroplanes dropped 46 bombs of 120 mm., and four of 150 mm. On the factories in the district of Rombach and Thionville, Capt. de Beauchamps and Lieut. Daucourt, each piloting a machine, started at 11 o'clock this morning from their aerodrome and threw 12 bombs on the factories of Essen (Westphalia). Our aviators returned safely to their landing point after accomplishing a flight of 800 kilometres (500 miles)."

"During the night of September 22nd-23rd a Zeppelin flew over the Calais district. Furiously bombarded by anti-

aircraft batteries, it was forced to make off without dropping any projectiles."

Paris, September 25th. Afternoon.

"Enemy aeroplanes at about 8.30 p.m. yesterday dropped about ten bombs in the region of Lunéville. A woman was slightly wounded, the material damage done being insignificant. Yesterday an enemy machine attacked by one of ours fell in a disabled condition north of Miserey. Three other machines were seriously damaged and were obliged to land. Last night 12 of our machines dropped 98 bombs on the village and station of Guiscard. On the same night seven of our machines dropped 50 bombs on the factories of Thionville and Rombach (German Lorraine) and on the railway station of Audun le Roman. A fire was seen to break out at Rombach owing to the bombardment."

Paris, September 25th. Evening.

"During the night of September 24th and 25th a group of our aeroplanes dropped 150 bombs on the stations of Ham, Hombieux, Manancourt and the aviation ground of Vraignes."

Russian.

Petrograd, September 25th.

"Our battle aeroplanes made a raid over the region of Lokachi, Rogovich, and Markorichi, and successfully dropped bombs on the enemy wagons and bivouacs. One of the enemy machines, having engaged us in fight, was injured, and fell steeply down."

Italian.

Rome, September 23rd.

"Yesterday evening towards sunset a squadron of Italian seaplanes and aeroplanes successfully bombarded the enemy batteries and fortifications at the torpedo station of Santa Salvore. All the machines returned safely to their base."

"Hostile aeroplanes dropped bombs on Monte Vecchio, Maggiore (Vicenza), and in the district of Misurina (Upper Anis) without doing any damage."

Rome, September 25th.

"Last night one of our airships, having eluded the enemy's searchlights, dropped bombs on the railway stations Dottergiano and Scoppo, on the Carso. The airship returned safely."

Roumanian.

Bucharest, September 18th.

"An enemy aeroplane dropped bombs on the town of Turnu Severin."

Bucharest, September 20th.

"Enemy aeroplanes dropped bombs on the town of Constantza, where no one was injured, and on Piatra-Neamt, where a child of six was injured."

Bucharest, September 22nd.

"Enemy aeroplanes in air attacks dropped bombs on Cernavoda, killing seven men, including two soldiers, and injuring several of the inhabitants. A number of animals were also killed and three houses destroyed."

German.

Berlin, September 22nd.

"German seaplanes successfully attacked with bombs, two Russian aeroplane mother ships, which, conducted by a cruiser, were bringing several destroyers and aeroplanes to the Bulgarian coast for an attack near Varna. The enemy naval forces were obliged to beat a rapid retreat, pursued by our seaplanes, which later successfully attacked an enemy transport steamer at Constanza and dropped bombs on

railway lines in the Northern Dobrudsha. All our aeroplanes, in spite of very heavy firing, returned undamaged."

[It was officially stated that the Admiralty had no confirmation of these statements.]

Berlin, September 23rd.

"In aerial fighting north of the Somme we shot down eleven enemy machines."

Berlin, September 24th.

"On the entire Front there has been considerable aerial activity, including numerous aerial battles over our lines and the lines of the enemy, which were favourable to us."

"We shot down 24 machines, 20 of which were brought down in the Somme region. We lost six machines."

"Late in the evening of September 22nd bombs were dropped on Mannheim (on the Rhine). One person was killed and some material damage was done. Enemy aviators also several times attacked the districts behind our lines. In Lille six civilians amongst others were killed and 12 houses were damaged."

"In an air attack yesterday in the region of Essen one child was killed and others wounded. The material damage was insignificant."

Essen, September 24th.

"The General in command at Münster reports that on Sunday, about three in the afternoon, several enemy airmen appeared over a suburb of Essen. Within a minute several small bombs were dropped in the centre of the town. Most of them caused no damage. Fires did not break out anywhere. Unhappily several children at play were injured by the bombs. After throwing bombs from a very great height the airmen disappeared in a bank of cloud."

Berlin, September 25th.

"In yesterday's numerous aerial engagements we shot down nine aeroplanes. Our anti-aircraft guns have brought down four aviators during the last few days. Six citizens were killed and 28 seriously wounded by an enemy bomb attack on Lens."

"Balkan Theatre.—The fortress of Bucharest was bombarded by one of our airships."

Austrian.

Vienna, September 23rd.

"A squadron of enemy naval aeroplanes ineffectively dropped a number of bombs near the Punta Salvore (south-west of Pirano)."

Turkish.

Constantinople, September 23rd.

"A Turkish aeroplane dropped 10 bombs on the armoured ship 'Empress Mary' and some destroyers. The 'Empress Mary' was observed to be hit several times."

Constantinople, September 25th.

"Gallipoli.—We prevented a reconnaissance by an enemy aeroplane on the Gallipoli Peninsula."

Bulgarian.

Sofia, September 21st.

"German aeroplanes attacked with success the enemy's railway line near Cernavoda, and caused great damage."

"A Russian squadron comprising twenty fighting units bombarded without success the heights to the north and east of the village of Pervelia."

"Seaplanes frustrated an attack by hostile seaplanes on Varna."

Sofia, September 22nd.

"German aeroplanes successfully bombarded the Danube bridge at Cernavoda and enemy camps near the villages of Cochirleni and Ivrinez."

From Other Sources.

Writing from Petrograd on September 14th, Reuter's correspondent states:—

"A squadron of four Russian giant aeroplanes of the Ilya-Murometz type bombarded the German seaplane station on Lake Angern, in the Gulf of Riga. Seventeen seaplanes of various sizes and models were discerned. The Russians dropped 73 bombs, of a total weight of 62 poods (about 1 ton). The sheds were soon concealed in smoke and flames. Eight enemy seaplanes attacked the Russian machines, but were speedily put to flight by machine-gun fire. As the result of the bombing and the air fight not fewer than eight enemy machines were destroyed or put out of action. The Russians returned safely, notwithstanding a hail of incendiary shells from anti-aircraft guns. On a previous occasion one Ilya-Murometz with a crew of five routed seven attacking German seaplanes."

Mr. W. Beach Thomas, writing to the *Daily Mail* from the Somme front on September 16th, in connection with the advance in which the new armoured motor cars played such a big part, states:—

"Such a battle has too many parts to suffer description. The battle in the air has perhaps never been equalled. The prisoner, who complained of the 'Tanks,' concluded by saying that they were anyway better than the aeroplanes. How many fights there were no one knows. I believe we destroyed more than the 13 enemy planes officially recorded. The enemy kite balloons bob up and down in terror after the havoc in their ranks."

"Village after village just behind the lines was bombed, and to complete the work the airmen came down low enough almost to stroke the back of the 'Tanks,' quite low enough to empty their bullet-drums at the enemy's infantry. The

'Archies' fired at them in vain, though, as it seemed to me scores of our craft were perpetually rolling across the sky on ball-bearings of shrapnel cloud. From half an hour before dawn till sunset there was a constant sky patrol enemywards and a continuous *chassé* over our advancing troops and the enemy's batteries. Every headquarters that day rang with aircraft messages."

Mr. Philip Gibbs, writing to the *Daily Telegraph* on the same subject, says:—

"Machine-gun fire rapped out in fierce spasms, and the German 'Archies' were throwing up shells which burst all about the planes of our airmen, who came like a flock of birds over the battlefields, flying low above the mists. Long after the sun was at its height there was the white ghost of the moon in the other side of the sky, and it was a strange and beautiful thing to see these aeroplanes of ours shining as though with aluminium wings as they flew through the shell-bursts. They did wonderful things yesterday, those British air-pilots, risking their lives audaciously in single combats with hostile airmen, in encounters against great odds, in bombing enemy headquarters and railway stations and kite balloons and troops, and registering or observing all day long for our artillery. They were out to destroy the enemy's last means of observation, and they began the success of the battle by gaining the absolute mastery of the air. Thirteen German aeroplanes (since reported by Sir Douglas Haig to be 15) were brought down, and their flying men dared not come across our lines to risk more losses.

"These soldiers of ours were superb in courage and stoic endurance, and pressed forward steadily in broken waves. The first news of success came through from an airman's wireless, which said:—

"'A "Tank" is walking up the High Street of Flanders with the British Army cheering behind.'

"It was an actual fact. One of the motor monsters was there, enjoying itself thoroughly, and keeping down the heads of the enemy. It hung out a big piece of paper, on which were the words:—

"'GREAT HUN DEFEAT. SPECIAL.'

"The aeroplane flew low over its carcass machine-gunning the scared Germans, who flew before the monstrous apparition. Later in the day it seemed to have been in need of a rest before coming home, and two humans got out of its inside and walked back to our lines."

The *Times* special correspondent in his despatch of the same day states:—

"As the sun rose we saw a beautiful sight above us, for in the sky there appeared suddenly a cluster of points of fire. Not far from them our aeroplanes were circling, and we

wondered for a while whether these fire sparks were some new form of anti-aircraft shell which the enemy had devised or whether they were something which one of the aeroplanes had thrown out. Then suddenly a little mist obscured the sun, or perhaps they changed their angle all at once, and lo! we saw that they, too, were aeroplanes. The sun's rays striking upwards had illuminated them so that each glittered as a mirror glitters, and, too dazzling to have any definite shape, had stood only as a point of fire against the blue of the sky.

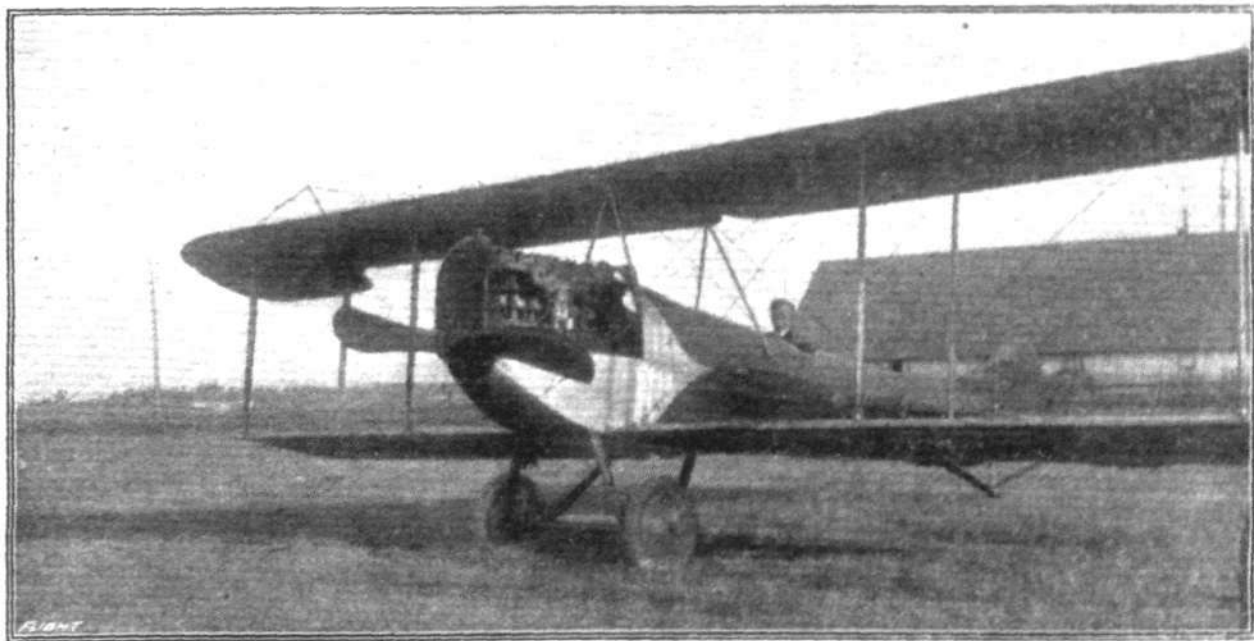
"The official *communiqué* has already told you briefly how well our aeroplanes did that day. That they destroyed 15 enemy machines and drove down nine others in a damaged condition to the ground was only a detail of their achievement. They came down low enough to use their machine guns against the enemy's guns and on his infantry in their trenches, and all the time, from their eeries in the clouds, they watched and understood and reported each change in the progress of the fight. To us down below they were not only a beautiful sight, but an amazement and an exaltation. If only one could shout and hail them and tell them how one admires them and glories in them up there, in their superb dominion of the air above the battle! Often the enemy's shrapnel burst thick about them, sometimes chasing one machine across the blue, sometimes bursting in bouquets among a fleet, as if the gunners were shooting blindly 'into the brown' of them. And nothing stops them in their appointed work; but always they swing and circle, pass and re-pass, rise and dip and bank and turn, proudly careless of themselves, caring only that the mastery of the air is theirs—and ours—and that we shall hold it."

Mr. G. Ward Price, in a despatch dated September 15th, from the British front in Macedonia regarding the British advance, notes:—

"From the hilltop where I was one could see the earth of the smashed entrenchments flying into the air, but besides these natural observation posts there was a French kite balloon anchored high above our heads, from which, with the extraordinarily good glasses served out to the French ballooning officers, the observers would just be able to see the very figures of the Bulgars in their trenches, if, indeed, there were any who were not as deep underground as they could go. English aeroplanes, too, sailed to and fro, keeping station like wild geese above the valley."

The *Daily Mail* correspondent at Bucharest, writing on September 14th, reports:—

"On Tuesday night waterplanes successfully bombarded Varna (the Bulgarian port on the Black Sea), dropping over 50 bombs. Many large fires were seen in the port."



ONE OF THE LATEST CHRISTOFFERSON TRACTOR BIPLANES FITTED WITH 125 H.P. HALL-SCOTT MOTOR.—The Chinese Government has placed an order for 25 similar machines

The *Daily Telegraph* correspondent in Milan, writing on September 14th, says:—

"To-day's official bulletin reports another bomb outrage on Venice by Austrian biplanes, in which they succeeded, after a flight of some 40 miles, in making a fairly good hit at the church of San Giovanni and Paolo, and the old-age poor asylum. The damages, happily, are stated to be slight, but the persistency with which the Austrians, while pretending to aim at alleged fortifications, which do not exist in Venice, succeed in hitting famous monuments, is peculiar.

"San Giovanni and Paolo is well known to every *habitué* of Venice. It was long ago declared a national monument, and stands in the midst of the Campo di San Zanipolo. It is the second largest church in Venice, and contains the tombs of more than twenty Doges. The edifice was built in 1430 in the Italian Gothic style, on the spot where an ancient oratory had stood. Owing to its being the resting-place of so many Doges it has often been called the Italian Pantheon. It contains also many paintings by the best Italian masters.

"If these vandal raids continue on Venice, it is not impossible that this sacred building, like many others, from having been a monument of Italian glory, may become a ruined monument to Austrian shame."

A Reuter message from Salonica on September 13th reports:—

"Two days ago Bulgarian aeroplanes dropped bombs on the outskirts of Kavala, killing six Jews and three Greeks and wounding many others. British and Russian warships are shelling the forts and heights around Kavala, which are occupied by the Bulgarians. Col. Christodoulos, with the remnants of his division and his guns and munitions, is expected to arrive here (Salonica) daily."

In an article on the French advance last week, the *Petit Parisien* says:—

"Admirably protected by the artillery, large numbers of aviators went up, and every quarter of an hour they made reports to General 'G,' throwing down notes containing all possible details. The majority of the aviators flew at a height of 150 metres.

"An extremely important position was taken by assault south of the Priez Farm, where the Germans had organised a veritable labyrinth of fortifications protected by numerous machine guns. Our artillery, advised by the aviators, had found the exact range, and wrought such destruction among the machine guns and shelters that the Germans were forced to abandon this strong position, an operation in which they were materially assisted by the vigorous assault of the French infantry."

The *Times* correspondent at the British Headquarters in France, writing on September 13th, notes:—

"They have generally been beautifully clear autumn days, though the mornings have been hazy and the visibility conditions poor until the sun has dispelled the mist. Then our airmen have had their chance—and have taken advantage of it.

"The day before yesterday three of our machines tackled a party of five enemy aeroplanes well behind the German lines beyond Thiepval. As soon as we attacked two of the German airmen went down. The other three stayed and fought until one was sent crashing to the earth, when the other two also dropped to safety.

"The official *communiqué* has told you how in the fighting of Saturday evening our aeroplanes followed our attacks, and, flying low, joined in the battle by using their machine guns on the enemy's troops. This is by no means the first instance of this being done, and I have quoted before passages from the letters and diaries of prisoners testifying to the audacity of our airmen and the terror with which the enemy regards them—'until you almost expect them to come down and drag you out of the trench,' as one man wrote.

"Yesterday I heard from prisoners much more talk to the same effect. The Germans all seem to have acquired a complete contempt for their own air service. They say that if an officer wants to get fat he joins the Flying Corps, the officers of which do nothing but go and sit in the theatre at Lille with their breasts all covered with medals. It is doubtless unjust. We know that our own flying men have a most chivalrous regard for their enemies in the air. But the bitterness on the subject among the German troops is universal, and is extraordinary testimony to the superiority of our own men.

"Being practically without direct observation now from

the high ground, the enemy has more than ever need of a competent air service. To-day he was doing his best to fill its place with a larger number of kite balloons than he has had up for a long time. They were especially numerous beyond Ginchy, at a safe distance behind his lines, and they were sufficient evidence of the straits that he is now in."

Writing two days later, he says:—

"The weather has been dull, with rain at intervals, and the clouds so low that aeroplane work would seem hardly practicable. But it is an inspiring thing to see our airmen, through wind and rain, below the clouds or among them, passing and repassing overhead, always patrolling the whole line of the battle front. Our flying men continue to dominate the air in a way which is, we know, very discouraging to the German troops, and must be intensely humiliating to German airmen. A German might well be afraid even to build a castle in the air nowadays.

"Now and again—especially after a few dull days when our men have been prevented from doing their worst—the enemy airmen pluck up courage and try to become aggressive. Thus, on September 7th, we are told in the official reports (there had been more or less rain on the three preceding days) 'the enemy's activity was considerably above the average. Several of his machines attempted to cross the lines for a short distance.' One of them was brought down.

"And this 'activity above the average' was at a time when every day our men were flying over every point of importance within 30 miles of the Front, and sometimes reaching places 70 miles away. They were dropping bombs on railway lines and depôts and ammunition stores and columns of transport on the road. They dipped down low to use their machine guns on marching troops. They attacked and destroyed the enemy's observation balloons. They even slid out of the clouds and—audacity could go no further—engaged and routed the anti-aircraft guns themselves!

"As for the way in which they bully the enemy's machines when they can get at them, a few specific examples will illustrate it. On September 1st Lieut. — encountered a formation of 12 Rolands. Naturally, Lieut. — got away as fast as he could. Did he? Read this:—

"He dived in amongst them, firing one drum. The formation was broken up. Lieut. — then got under the nearest machine and fired one drum at 15 yards under the pilot's seat, causing the machine to plunge to earth south-east of Bapaume. Shortly afterwards some more hostile aeroplanes came up in formation. Lieut. — attacked one, which went down and landed in a gap between two woods. Several other machines were engaged with indecisive results, and, having expended all his ammunition, Lieut. — returned."

"It was careless of Lieut. — not to have more ammunition about him; but what is one to say to a man like this, who spends a happy day in tackling, first, 12 enemy machines and then 'several' more, diving into them like a hawk into a flight of pigeons and simply 'shooing' them all over the sky?

"And that same evening another lieutenant took a hand in the game of fluttering Volscians. The covey which he ran into had only eight birds. He picked out one—doubtless the old cock, though the report does not say so—which 'went down in a spin' (you know how a bird does it sometimes) 'falling near Bapaume.' The neighbourhood of Bapaume seems to have been fairly sprinkled with damaged enemy aeroplanes that day.

"Another two officers encountered six enemy machines near Cambrai. Then follows:—

"While he was diving at the hostile patrol leader three hostile machines dived on to the tail of Lieut. A's machine. One of the enemy machines was engaged by another pilot, while Lieut. B. engaged another and fired 2½ drums into it as it passed across the tail of his machine. This enemy machine made a vertical dive with a stream of smoke pouring out behind. Lieut. A. turned and opened fire on the third machine with his front gun, firing about 20 rounds at it. The pilot turned and got under the tail, and Lieut. A. also turned and fired another 20 rounds into it, after which it was seen to dive vertically out of control and to turn on its back. The remaining hostile machines dispersed, and were seen to land west of Cambrai."

"On another occasion one of our machines was attacked by four of the enemy, but, 'turning sharply, emptied one drum into the nearest at 20 yards range,' when the enemy turned on his side and fell. The pilot then attacked another

machine which was just above him, firing a drum and a half at close range. The Roland turned a complete cartwheel on its right wing tip, and fell out of control.

"These little exploits are only incidents in the regular daily work of our flying men. Their most important job is spotting enemy gun positions and other things so that our own guns may get on to them. On one day 132 targets are thus 'dealt with.' On another day our men go bombing an aerodrome, and they see the enemy wheeling all their machines out of the sheds—which they know will be bombed—so our men drop a little lower and bomb the machines in the open. Another time they go for a factory and 'a big explosion occurs.' Then it is a railway station which 'is hit in several places.' Or they come down and use their machine guns on the soldier workers massed about a pithead, or on 'the enemy's support lines,' or 'the second line hostile trenches south of Beaumont Hamel.'

"One does not wonder that the Germans in their trenches hate our aeroplanes. What one does wonder at is that now for two months and more this thing has been going on, and that it is only in bursts, when the protection of bad weather has given the enemy a chance to pull himself together, that the German airmen attempt the initiative at all."

Capt. Philippe Millet, writing from Paris on September 22nd, to the *Observer*, says:—

"The minuteness of the preparation is surely one of the most comforting features of the new war. It is generally known that, in order to make sure that all the enemy works have been properly destroyed, photographs are repeatedly taken by aeroplanes. But this is not considered enough. All these photographs are submitted not only to the divisional staff concerned, but to all the company commanders who are to lead the attack; they are required to state whether they think that the destruction is complete, and, whenever there appears to be a doubtful point, to send out a patrol to confirm by direct inspection of the ground the results shown by the photograph. Then, and not before, the infantry attack is launched. Here begins the second stage.

"Everyone acquainted with trench warfare knows what the root difficulty was up to the present advance. It had been quite rightly assumed that the attacking troops must only advance under a protective curtain of shells. On the other hand, as all the wires are cut as soon as a battle begins, one did not see how to make sure that the moving curtain of shells would precede the attacking infantry without going too fast or—which was a more ominous danger—too slow. The difficulty seemed so insuperable that some of the best artillery officers suggested that the only way out was to time exactly beforehand the movements of the attacking troops with the lengthening of the range. Any advance under such

a system would have had to proceed according to a sort of railway time-table.

"Fortunately, another solution was found, since the Allies have achieved the mastery of the air. The connection between the advancing infantry and the artillery is now ensured by the so-called infantry aeroplanes. Each French division is provided with a number of these. Their task is to follow closely the advancing line, not in order to fire on the enemy, but simply to report to the gunners and let them know exactly what is going on. As soon as the infantry has reached a given point, the 75's are informed that they must lengthen their range beyond it so as not to hit our own men. Information is similarly given if the infantry happens to be held up by any unsuspected obstacle, or if a German counter-attack is seen coming up from the rear.

"The way in which this new device has worked on the Somme is simply marvellous. It is mainly to this scientific system that the troops owe the fact that they have been able to advance under a curtain of shells which moved continuously ahead of them at a distance of 200 or 300 yards."

A distinguished worker at the Front, describing his impressions on a recent tour of inspection, in a letter home, which was published in the *Times* of September 24th, says:—

"From Albert we went on to La Boisselle, which I had seen through a periscope from the front-line trenches in May. There is little of it left now. Our guns were blazing away, and I counted 19 flying machines of sorts in the air at one time. Some were observing balloons, so-called sausages, of which we have a line at equal intervals; the others were aeroplanes, all British. The Boche was not showing, and very seldom does in front of his Army, where we are in great aviation strength and easily command the air. . . . After tea went to an aerodrome not far off.

"A storm was threatening and the aeroplanes began to come in sooner than they intended, because in a storm, or some storms, the compass-needle whirls about so that all sense of direction is entirely lost. The storm came and gave me a chance for a long talk with the officers. They were nearly all very young, of very slight build, and had those curious eyes which seem to come from long looking into the distance. I think they remain permanently more widely open and that the effect is produced in that way, but I am not sure of it. Aeroplanes belonging to a neighbouring squadron passed over during the storm; my friends thought it foolish not to come down at once on their ground, but I rather think that each prefers his own to his neighbour's home. When the storm ceased one of them went up to practise firing his machine-gun at a target on the ground; he rattled off a great number of shots in a very short time, but I was told that it was much easier to hit a moving than a stationary object."



Aircraft Work in Egypt.

In the despatch, published in the *London Gazette* of September 26th, from General Sir Archibald Murray, the Commander-in-Chief of the Egyptian Expeditionary Force from January 9th, 1916, to May 31st, there are several references to the work of the R.F.C. In dealing with the survey of the Canal zone, General Murray says that co-operation in this work has been part of the routine of the R.F.C.

Other quotations are as follows:—

"Up to the middle of February aeroplane reconnaissance was the only active military operations possible, owing to the need for reorganising the units of the force and for pushing on the work of laying roads, pipe lines and railways to enable an adequate force to be maintained on, and beyond, the front lines.

"On April 22nd the R.F.C. reported to No. 3 Section that new bodies of enemy troops were at Bir-el-Bayud, 15 miles E.S.E. of Qatia, and Bir-el-Mageibra, 10 miles S.E. of Qatia.

"The Turks were pursued in their retreat by the 5th Australian Light Horse, who had only arrived at Qantara at 1 p.m., and by aeroplanes, thereby suffering further loss.

"Aeroplane reconnaissance on the evening of the 23rd established the fact that the enemy force, which included a large body of picked Turkish regular troops, was already retreating. At dawn on the 24th eight machines of the 5th Wing, Royal Flying Corps, made a bomb and machine gun attack from a low altitude on the enemy troops left in Qatia, causing very heavy casualties and completely destroying the camp. One machine also located and attacked a large body

of enemy at Bir-el-Abd, and located another party retiring on Bir-el-Bayud. On the morning of the 25th further bomb and machine gun attacks were made by the Royal Flying Corps on enemy forces at Bir-el-Abd and Bir-el-Bayud. Both attacks were extremely successful, working great havoc among men and animals.

"I cannot speak too highly of the admirable work done by the 5th Wing, Royal Flying Corps, during these few days. The strain thrown on pilots and machines was very heavy, and the former displayed the utmost gallantry and resource on all occasions. Chiefly through their efforts the enemy was made to pay a very heavy price for his partially successful raid."

General Murray also submits the following list of names of officers, N.C.Os. and men whom he considers deserving of special mention:—

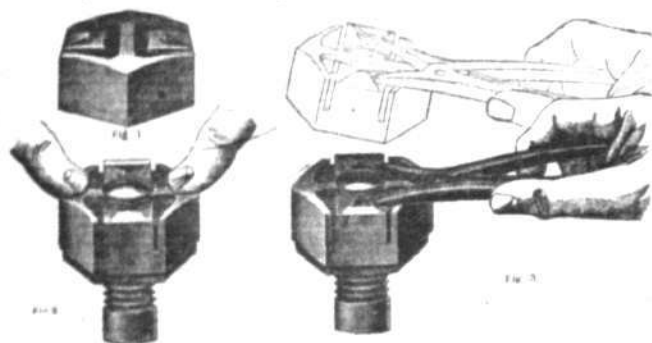
"*Royal Flying Corps*.—Salmond, Brevet Lieut.-Col. (Temporary Lieutenant-Colonel) W. G. H., R.A.; Freeman, Capt. (Temporary Major) W. R., Manch. Regt.; Blackburn, Capt. H., Special Reserve; Lucas, Lieut. (Temporary Capt.) Rt. Hon. A. T. Lord, Hants Yeo.; Bowden, Lieut. (Temporary Capt.) C. R., Worc. R.; Minchin, Lieut. (Temporary Capt.) F. F., Can. Local Forces; Bellamy, Temporary Lieut. F., General List, New Armies; Gardner, 2nd Lieut. (Temporary Lieut.) G. D., Yorks R., Special Reserve; Hill, 2nd Lieut. C. W., Special Reserve; Davies, 2nd Lieut. T. G.; Baillie, Temporary 2nd Lieut. W., General List, New Armies; May, No. 167, Flight-Sergt. A. R.; Meynell, No. 2988, Flight-Sergt. E.; Green, No. 136, Flight-Sergt. H.; Hellyer, No. 718, Flight-Sergt. F. J.; Whilton, No. 198, Sergt.-Major F.; Felstead, No. 605, Sergt.-Major G."

Ninety Years Ago.

Ballooning.—Mrs. Graham ultimately landed at Newington Green, where the balloon was seized by some brick-makers and cut to pieces, because a sufficient quantity of beer was not distributed among them.—(*From the "Sunday Times" of September 24th, 1826.*)

The Crown Locking Nut Cap.

DEVICES for locking-nuts there have been in plenty, but few have found favour to any extent. One objection to many devices is that they are bulky. This, however, cannot be urged against the Crown cap, which is a steel stamping fitting closely over the nut and so taking up practically no more room than the nut itself. All that is necessary is for a slot to be cut in the bolt or stud to accommodate the bar of the cap, which is then pressed over the nut, and the two



THE CROWN LOCKING CAP.—Fig. 1 shows the locking cap ready to fit on a nut. Fig. 2. Fixing the cap on the nut. Fig. 3. Expanding the clips and removing the cap from the nut.

tongues ratchet over the threads, thus effectively locking the cap. When it is desired to remove the cap, it is only necessary to force back the tongues. This can easily be done by a pair of pliers opening in the reverse direction to the normal. The use of this special tool is not necessary, but where the locking caps are in constant use it will be found a great convenience, as the caps can be removed without being damaged in any way. The makers are the Crown Locking Cap Co., of 1, Bank Chambers, Bromsgrove Street, Birmingham, and the cap is made in sizes from $\frac{1}{8}$ to 2 $\frac{1}{4}$ ins.

The Federation of British Industries.

To provide a body capable of representing the interests of the British Manufacturing and Producing Industries is the object of the Federation of British Industries, which has just been formed. The President is Mr. F. Dudley Docker, C.B., while the Executive Council of 30 or 40 includes Sir Vincent Caillard (Vickers, Ltd.), Mr. F. R. Davenport (Willans and Robinson), Mr. Godfrey C. Isaacs (Marconi Wireless Telegraph Co.), Mr. E. Manville (Daimler, Ltd.), the Right Hon. Sir George H. Murray (Sir W. G. Armstrong, Whitworth and Co.), Mr. A. W. Tait (British Aluminium Co.). Full particulars can be obtained from Mr. R. J. Nugent, 51, Lincoln's Inn Fields, W.C.

The Sunbeam Charity Sports.

It was a happy thought when the employees, supported by the directors, of the Sunbeam Motor Car Co., Wolverhampton, decided to promote sports in aid of the Wolverhampton Charities. These sports held at the Molyneux Grounds on September 16th were well attended, a crowd of about 7,000 persons being present. The weather was all that could be desired, and the racing events to the number of 10 were well filled. The prizes were distributed by the veteran chairman of the company, Alderman John Marston, J.P., supported by Mr. W. M. Iff, Mr. H. J. Bath, Dr. Deansley (directors), Mr. Alfred Bird, M.P. for West Wolverhampton, and others of the staff of the company. It is intended these sports shall be an annual event. Mr. C. H. Palmer and Mr. Cooper made two admirable secretaries.

For Light Pressed Steel Stamped Work.

To facilitate prompt delivery and attention, all communications for Messrs. Joseph Sankey and Sons, Ltd., who specialise in undershields and other light-pressed and stamped work in steel, aluminium, &c., for aeroplanes, should henceforth be addressed to them at Hadley Castle Works, Wellington, Shropshire.

A "Winged" Treasure in the Trenches.

"A WEEK ago," writes a Corporal in the A.S.C., M.T., "I dropped my 'Swan' fountain pen near the trenches in the dark, and as it meant pretty certain sniping if I lit a match, I reluctantly had to abandon it. This morning I was passing that way again, and found my lost property 50 yards from where I had missed it. Apparently a bursting shell had blown it down the road. I have had the pen in constant use ever since the early days of the war. That it stood the rough usage without ever failing me, and was as smooth in writing at the end as when first I had it, bears evidence of 'Swan' excellence and utility for soldiers at the Front."

Thousands of "Swan" pens are being used by our men at the Front and in the Fleet, and, in truth, what more useful present could be sent to either soldier or sailor? Our readers would do well to ask the manufacturers, Mable, Todd and Co., Ltd., 79 and 80, High Holborn, London, W.C., for their free booklet giving full particulars.

PUBLICATIONS RECEIVED.

In the Royal Naval Air Service: being the War Letters of the late Harold Rosher. London: Chatto and Windus. Price 3s. 6d. net.

Smithsonian Miscellaneous Collections. Vol. 62, No. 5. *Dynamical Stability of Aeroplanes.* By J. C. Hunsaker, Eng.D. Washington, D.C., U.S.A.: The Smithsonian Institution.

Flying Men and Their Machines. By Clarence Winchester. London: J. M. Dent and Sons, Ltd. Price 6s. net.

With Wings Outspread. By Marc Gouvrieux. London: William Heinemann. Price 5s. net.

Aeronautical Engines. By F. J. Kean, B.Sc. (Lond.). London: E. and F. N. Spon, Ltd. Price 6s. net.

Courts of Inquiry on Illegal Absence. By Capt. A. A. Scanlan, A.S.C. London: Forster, Groom and Co., Ltd. Price 1s. 6d. net.

Announcements, Educational and Social, for the Session 1915-1916. Northampton Polytechnic Institute, St. John Street, London, E.C.

Catalogue.

Aircraft Accessories and Equipment. Brown Brothers, Ltd. Great Eastern Street, E.C.

NEW COMPANY REGISTERED.

CHELTENHAM AND WEST OF ENGLAND AVIATION CO., LTD.—Capital, £7,000 in £1 shares. First directors: F. Ruffy (managing director), H. W. Stephens and H. Stroud.

Aeronautical Patents Published.

Applied for in 1915.

Published September 28th, 1916.

12,991. G. A. CHADDOCK. Mechanically air-borne ship.

Applied for in 1916.

Published September 21st, 1916.

8,372. C. BARRETT AND G. MORROW. Self-controlled airships or aerial machines for dropping bombs. (101,231.)

Published September 28th, 1916.

140. M. A. CODD. Lamps for aircraft, &c. (101,300.)

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